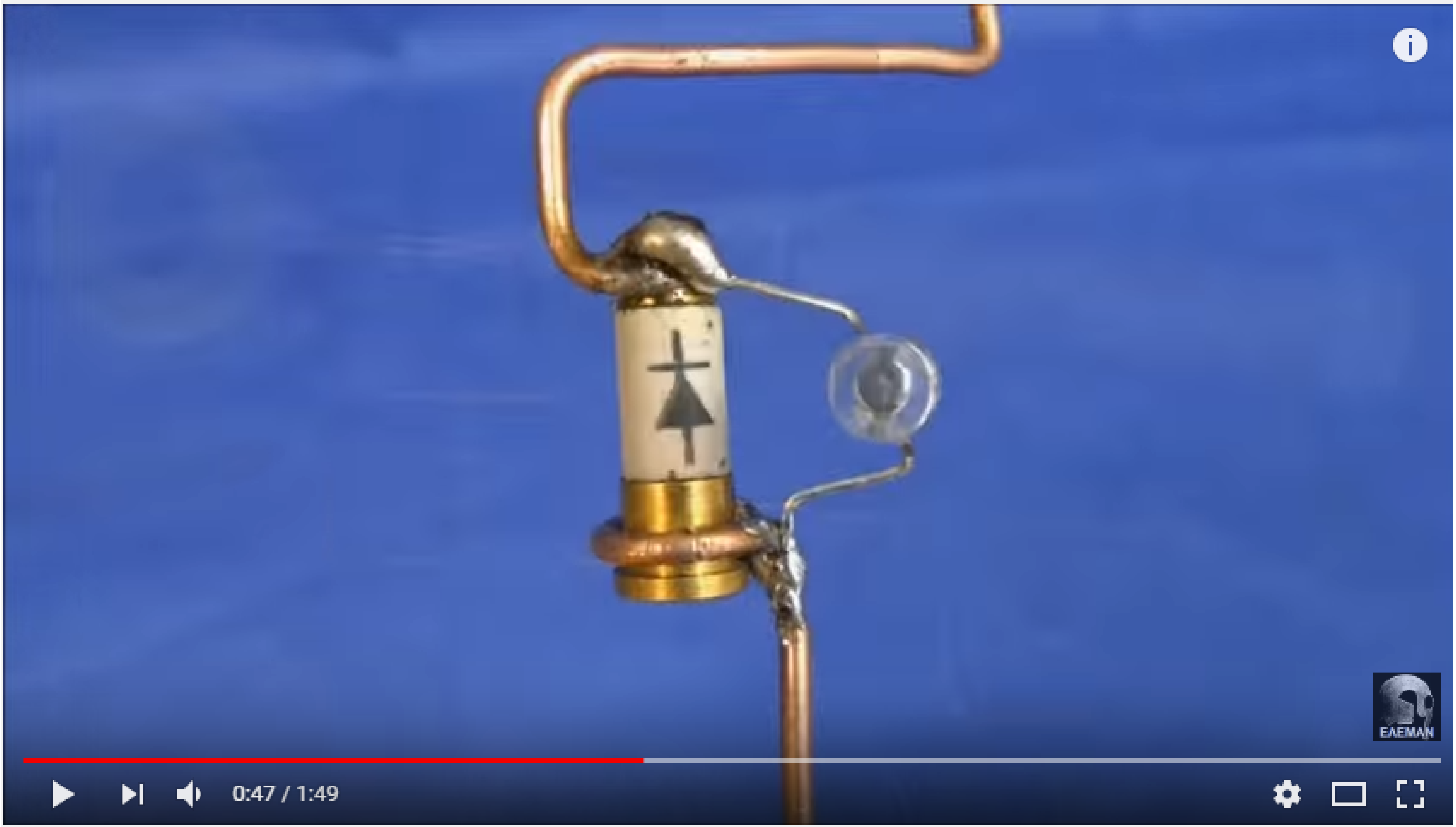

ΕΛΕΜΑΝ
0:47 / 1:49

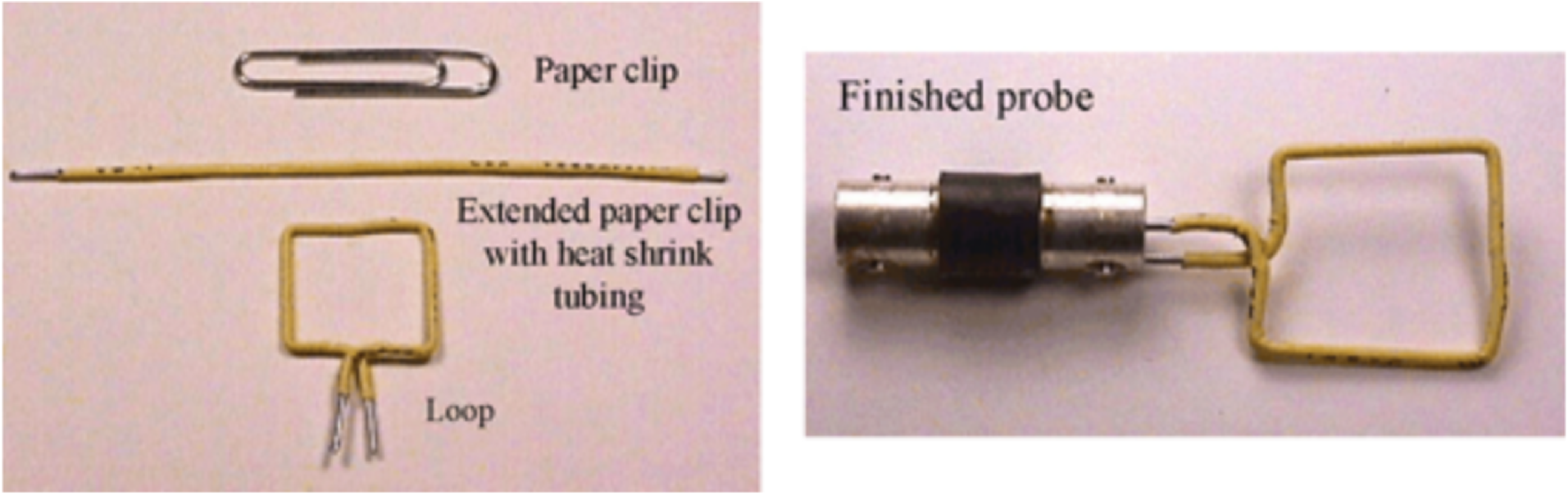
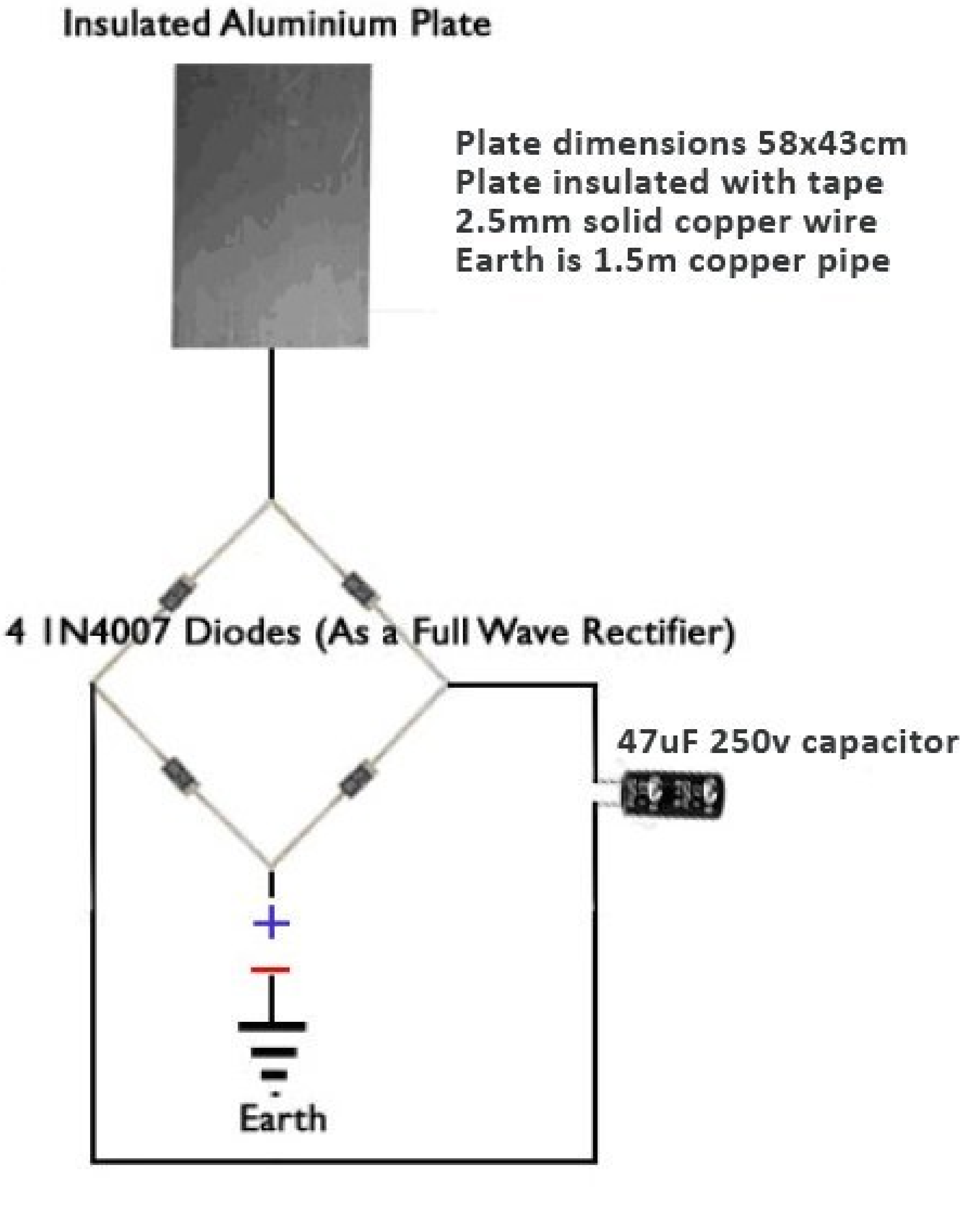
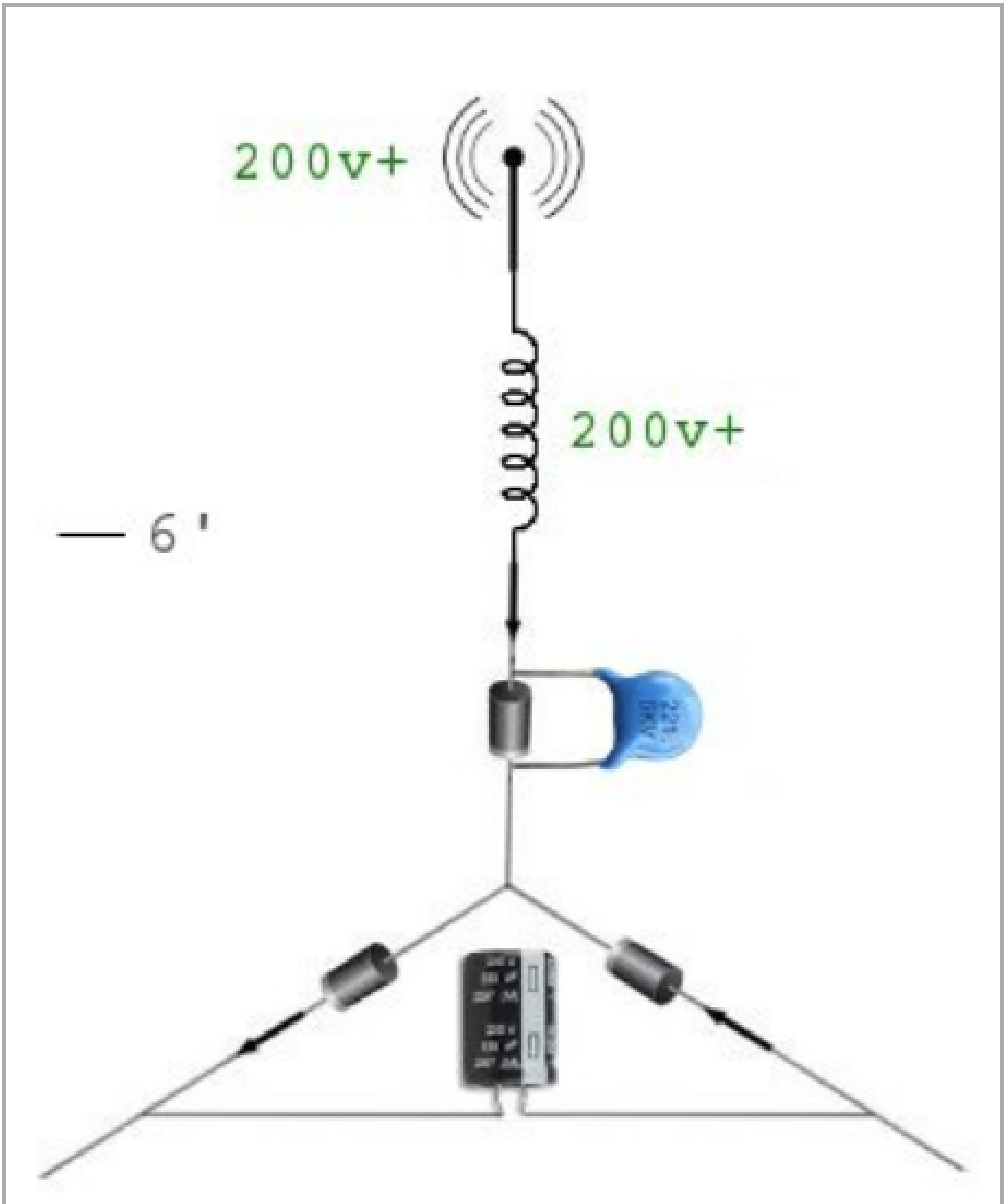
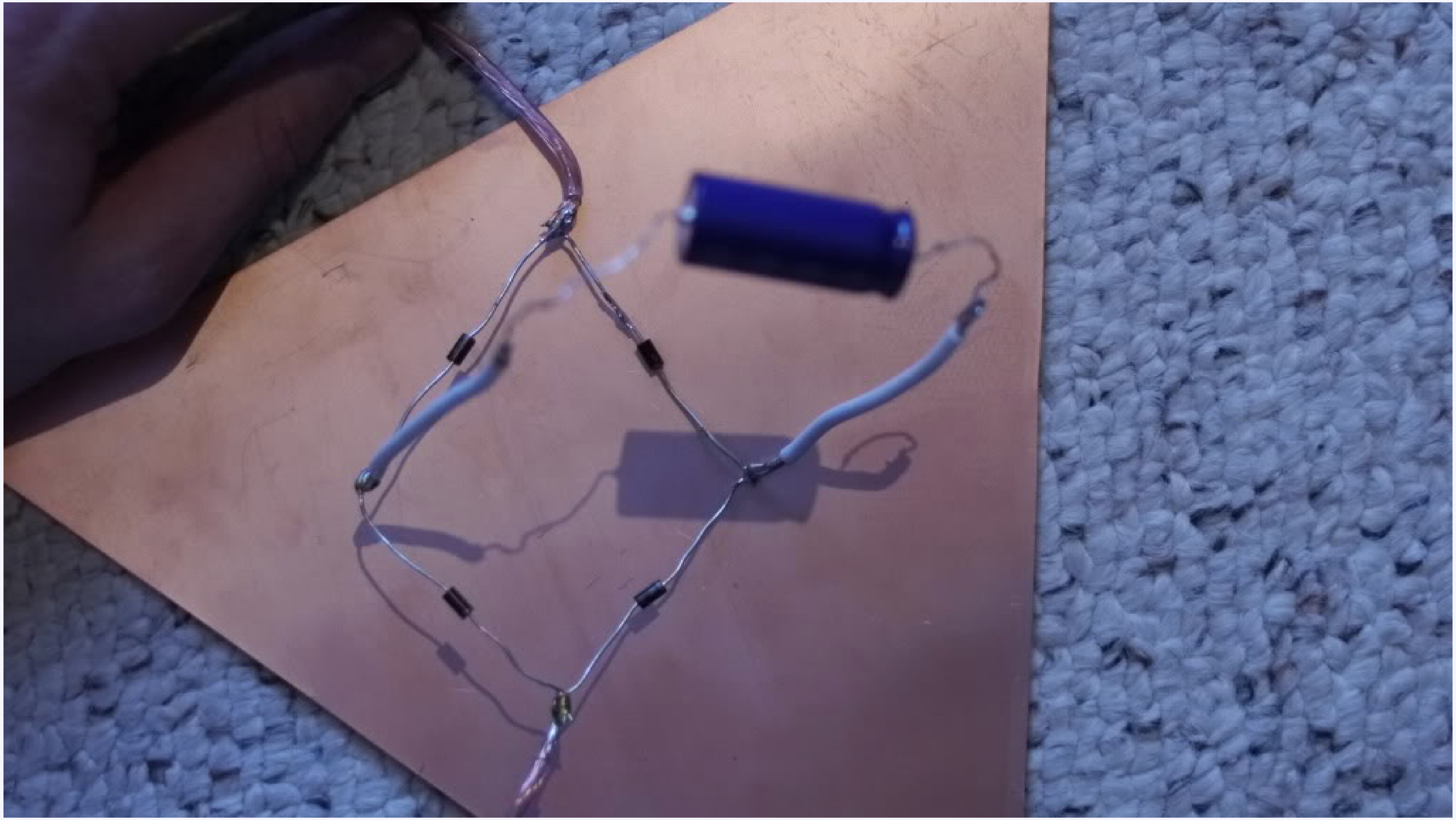


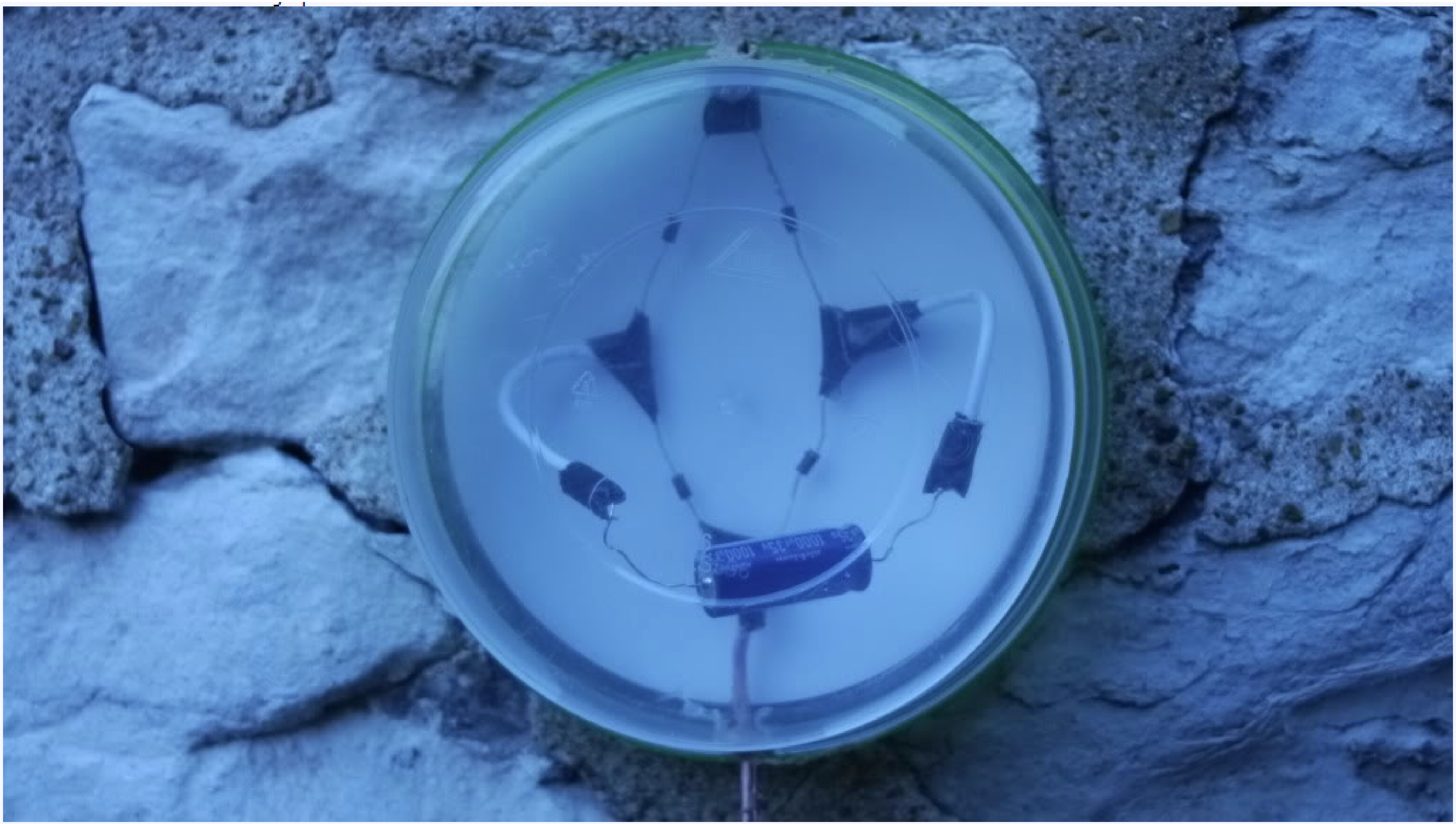
Figure 1: Magnetic field probe build from a paper clip.


Insulated Aluminium Plate
Plate dimensions 58x43cm
Plate insulated with tape
2.5mm solid copper wire
Earth is 1.5m copper pipe
4 1N4007 Diodes (As a Full Wave Rectifier)
47uF 250v capacitor
+
−
Earth


200v+
200v+
— 6'

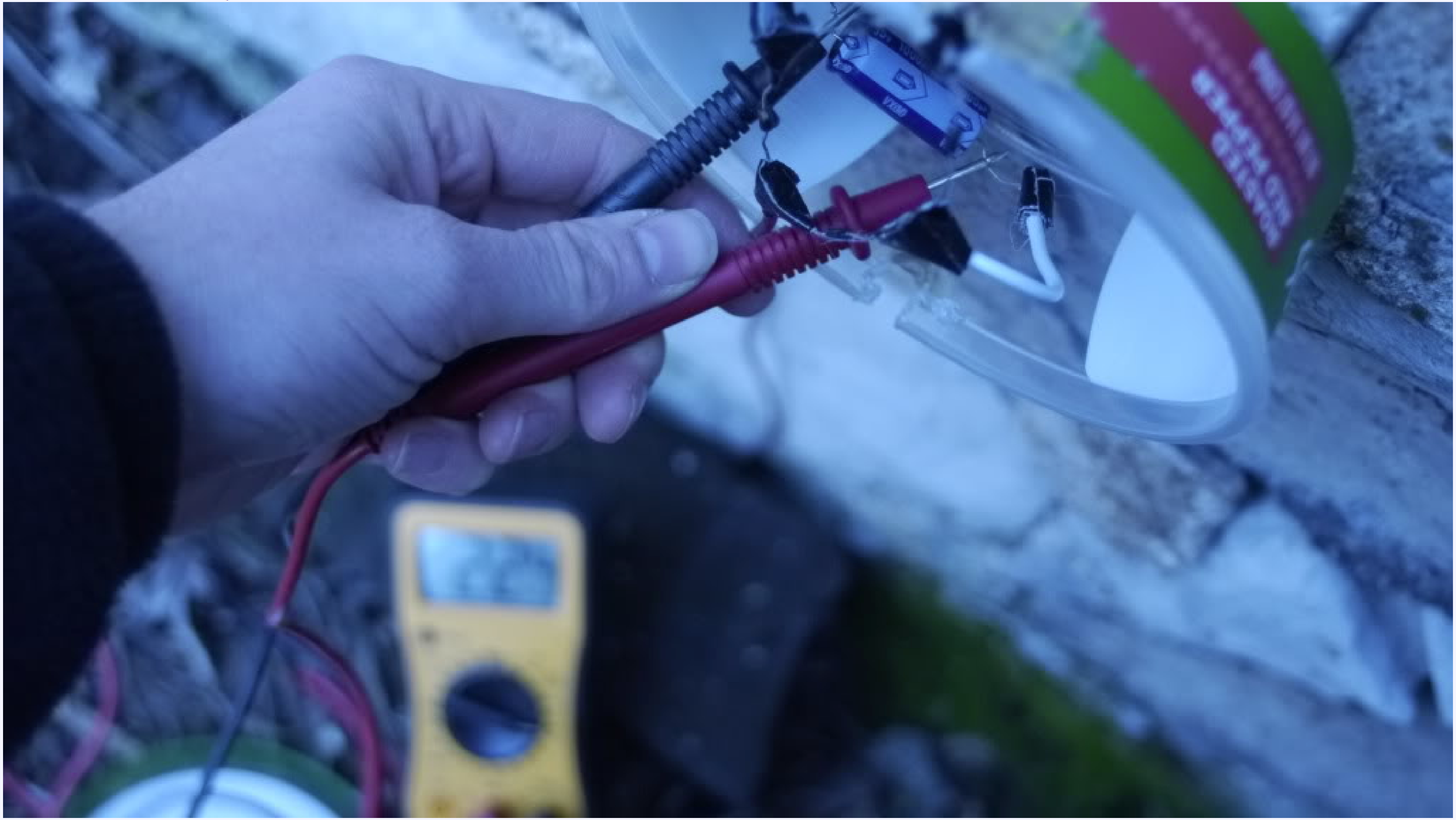


^^^ here is the 4 diodes arranged to create a full wave bridge rectifier. The diodes are 1N4005 diodes from radioshack, and the blue capacitor (radioshack) is 35Volt 3300uF,


^^^ view of the circuit

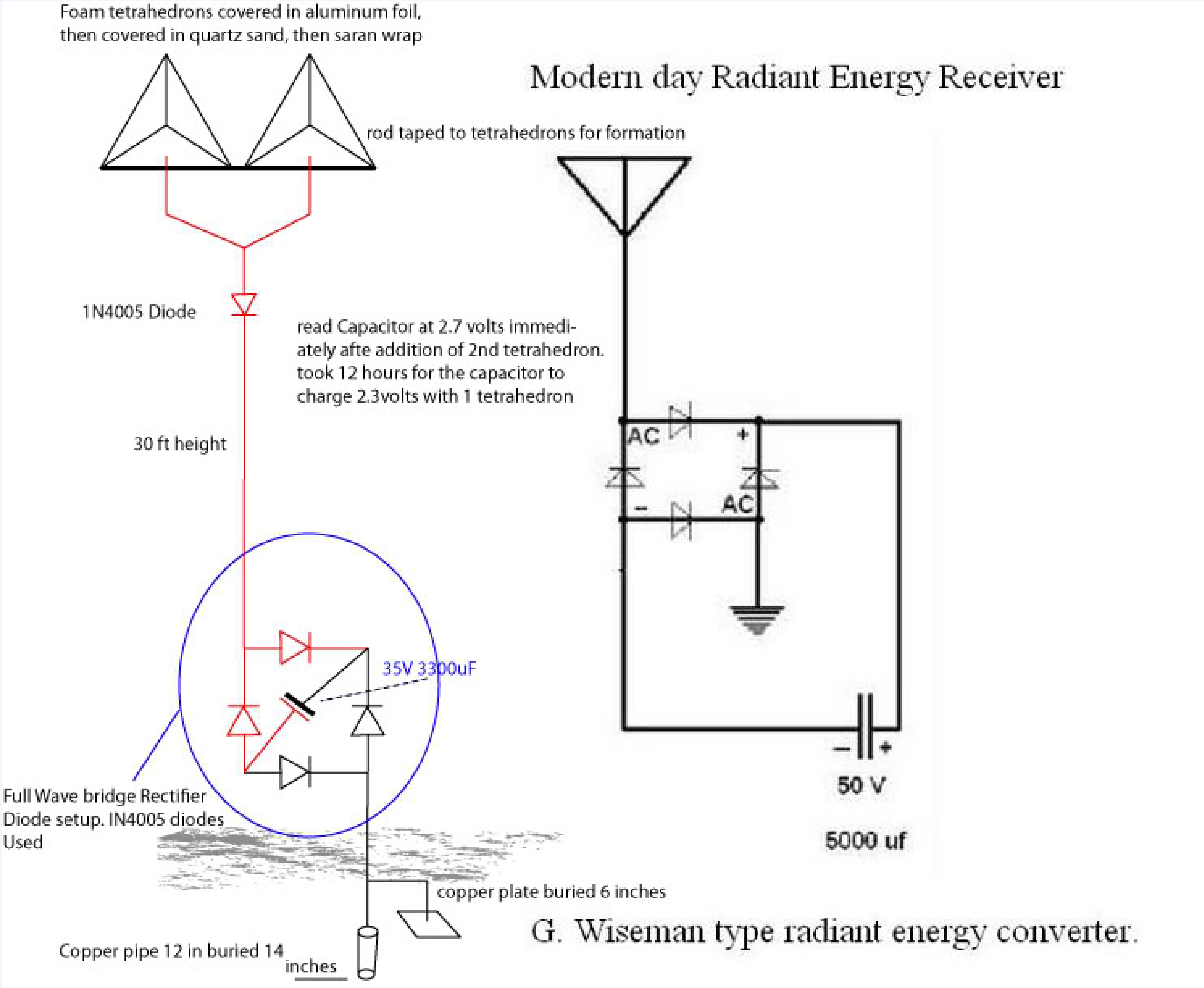
^^^liquid nails to plug the hole, to keep rain out

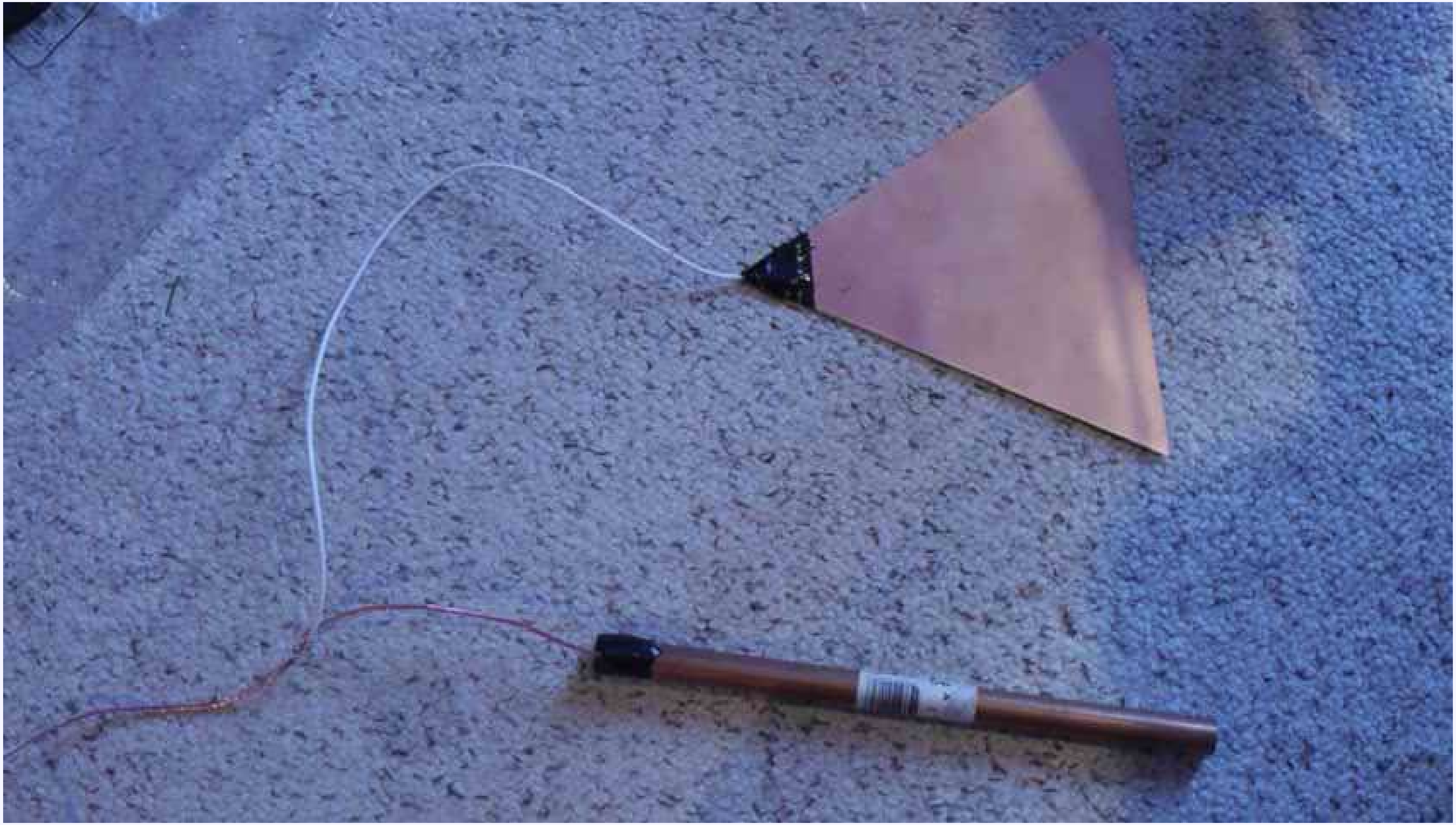
^^^view of the circuit , lid off

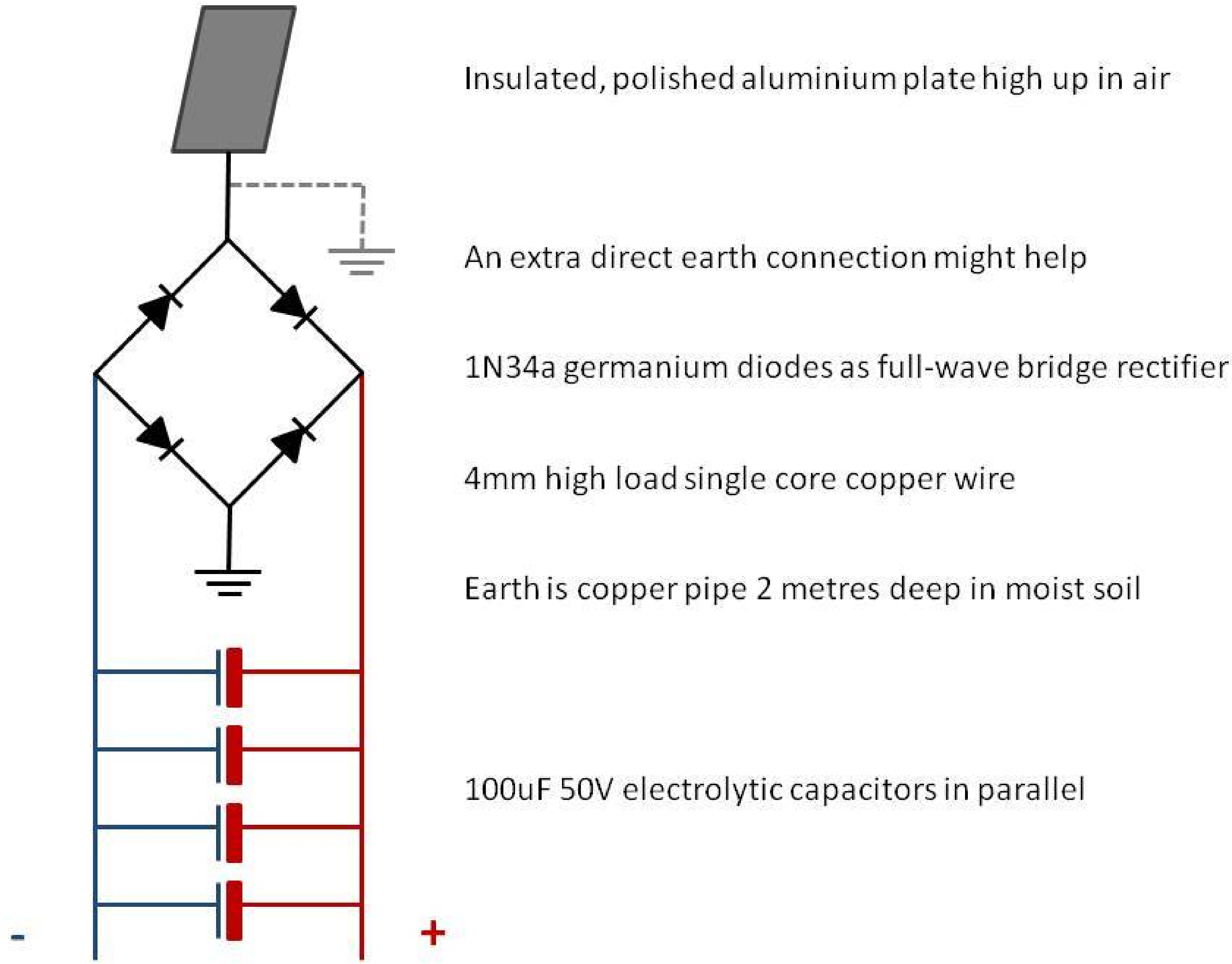


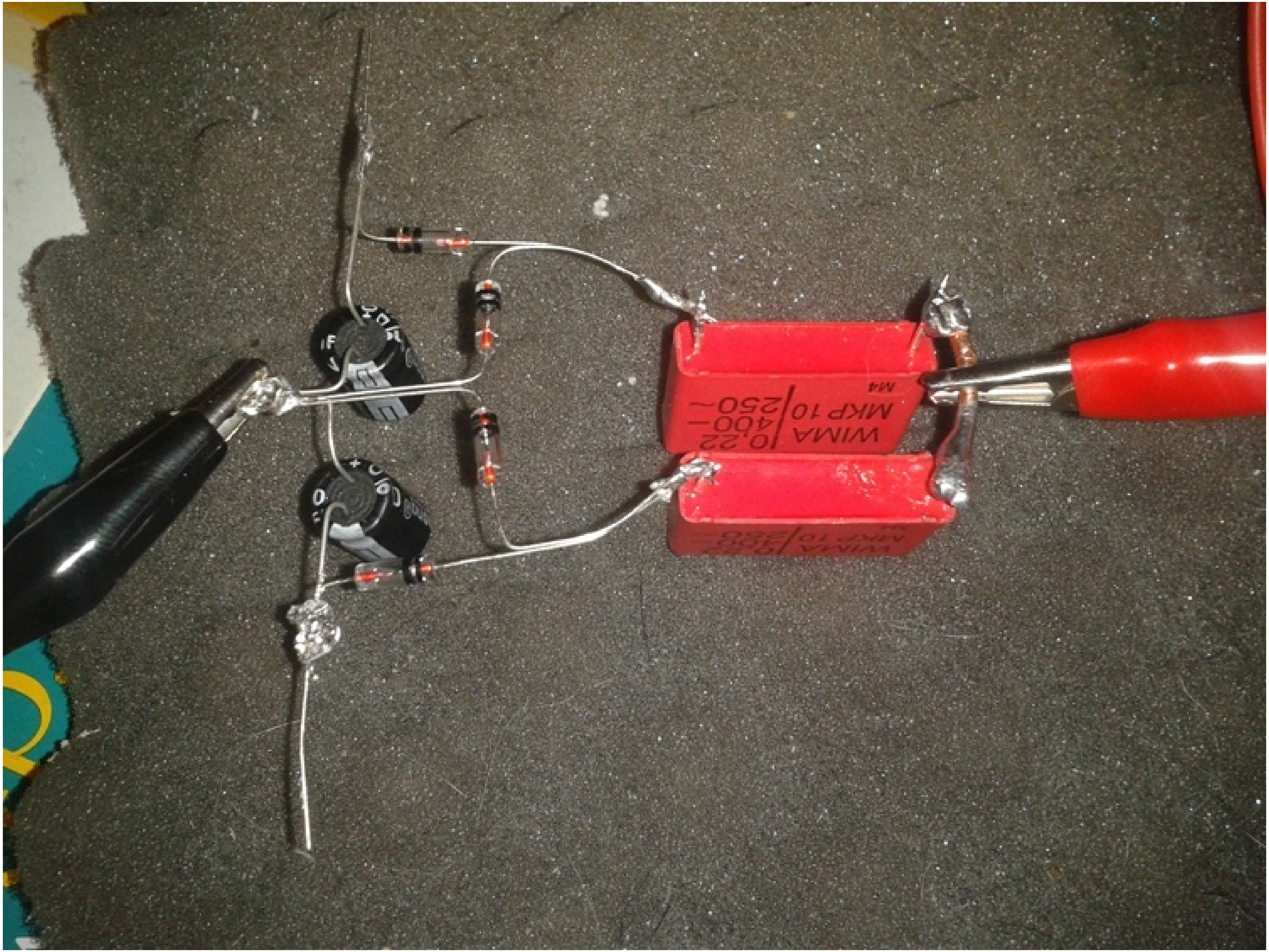
^^^ testing the cap 2.25volts (now at 2.81volts) with 3 antennas

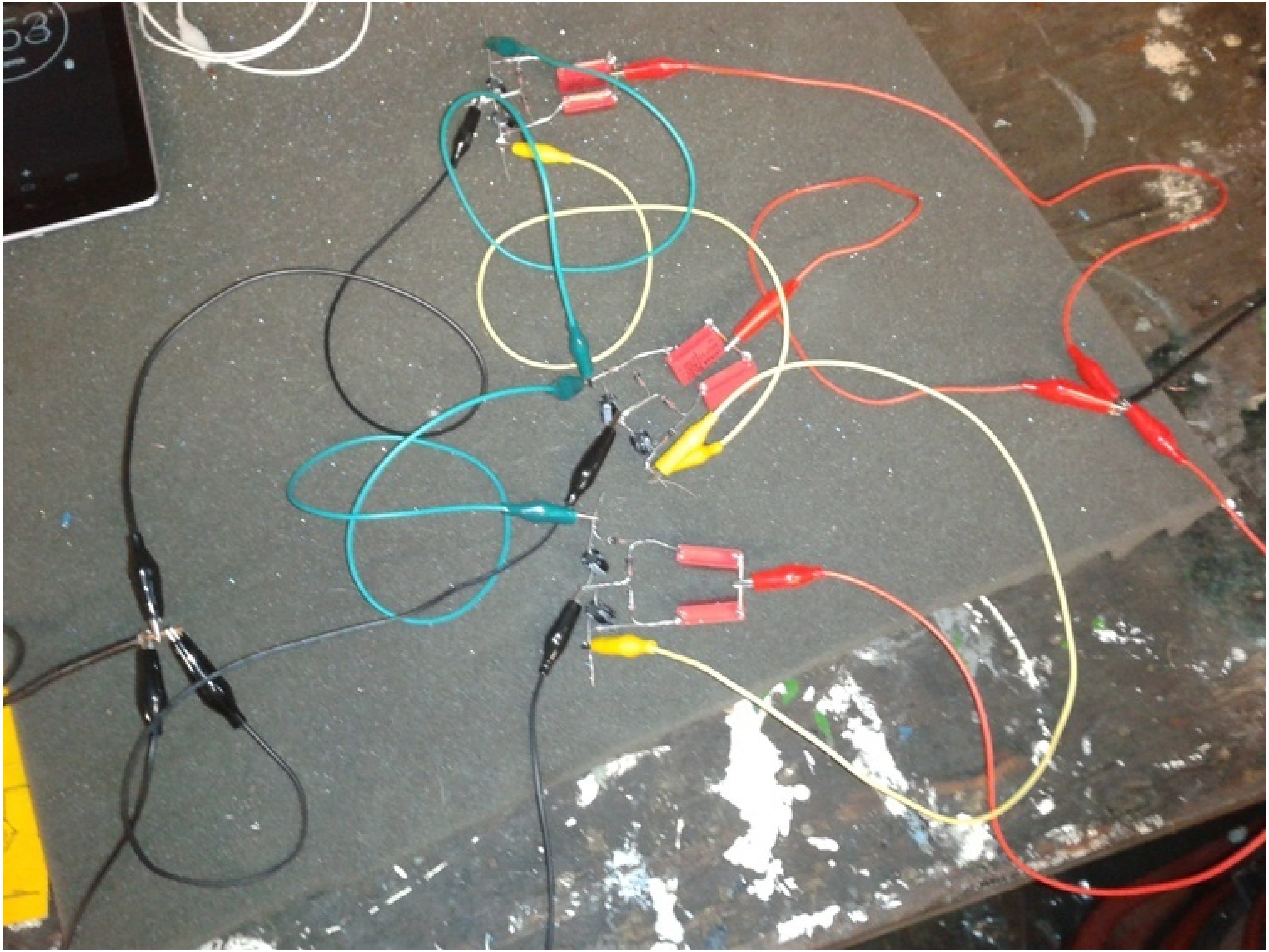
I made a radiant energy antenna for my 1st Free Energy project, and with LOTS of help and knowledge sharing fro
have 3 antennas and 2 grounds and have 2.81 volts in my cap. Somethings better than nothing☺ heres some pics

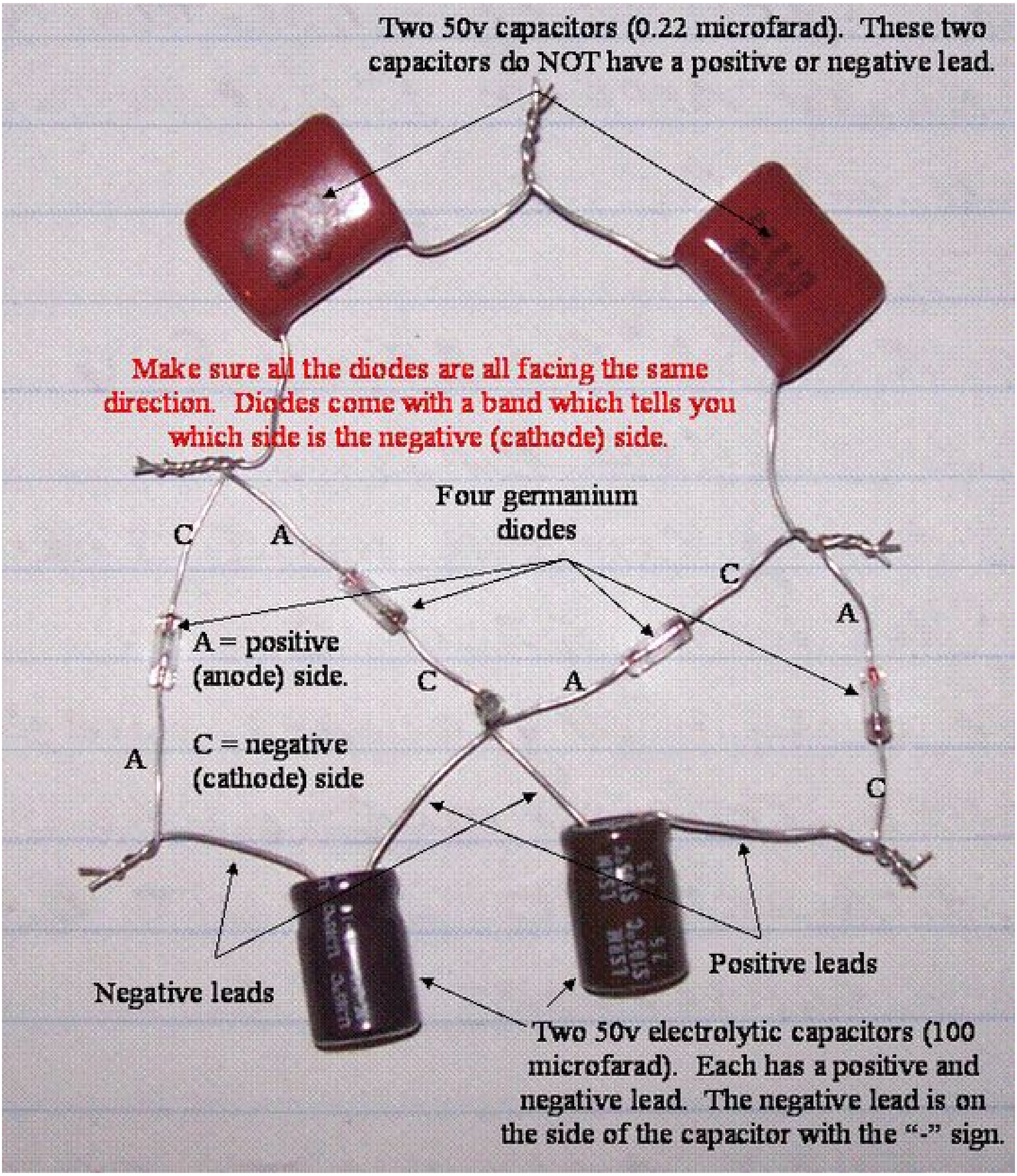



^^^these are the pieces of copper that gets buried in the ground they syupply the (-) of electricity


Insulated, polished aluminium plate high up in air
An extra direct earth connection might help
1N34a germanium diodes as full-wave bridge rectifier
4mm high load single core copper wire
Earth is copper pipe 2 metres deep in moist soil
100uF 50V electrolytic capacitors in parallel
-
+

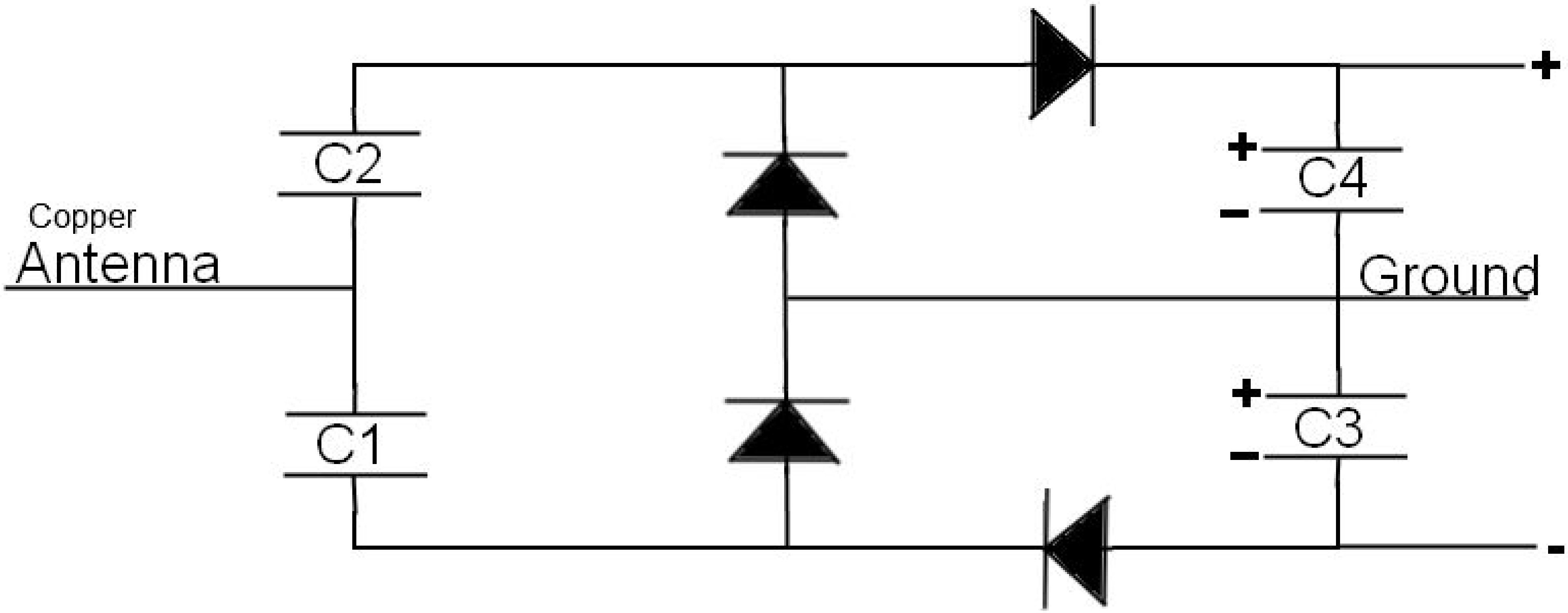

WIMA
0.22
MKP 10
400–
250~
M4



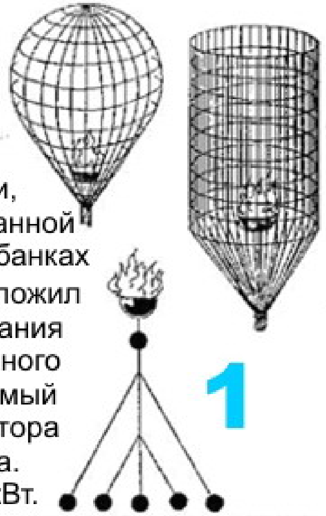

Two 50v capacitors (0.22 microfarad). These two capacitors do NOT have a positive or negative lead.
Make sure all the diodes are all facing the same direction. Diodes come with a band which tells you which side is the negative (cathode) side.
Four germanium diodes
C
A
C
A
C
A
A
C
A = positive (anode) side.
C = negative (cathode) side
Negative leads
Positive leads
Two 50v electrolytic capacitors (100 microfarad). Each has a positive and negative lead. The negative lead is on the side of the capacitor with the "-" sign.

Tesla Generator - Ambient Power Harversting Circut

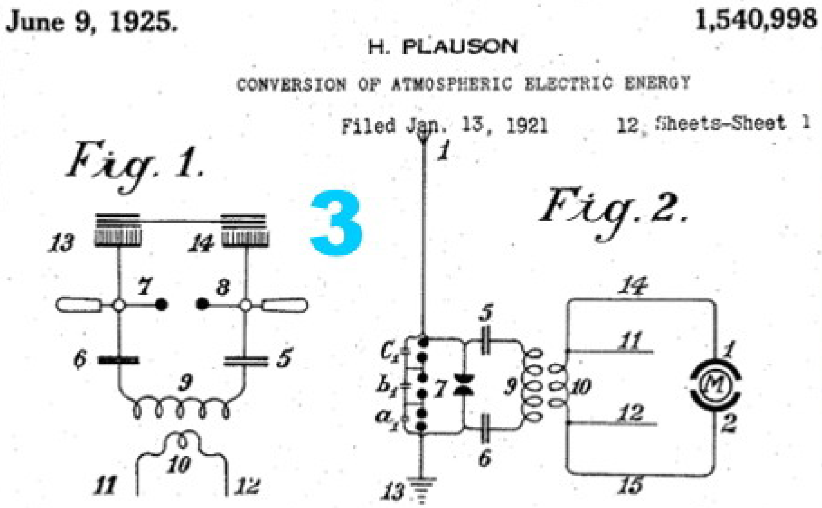
4 - Germanium Diodes (1N34)
2 - 100µF 50v Electrolytic Capacitors
2 - 0.2µF 50v Ceramic Capacitors

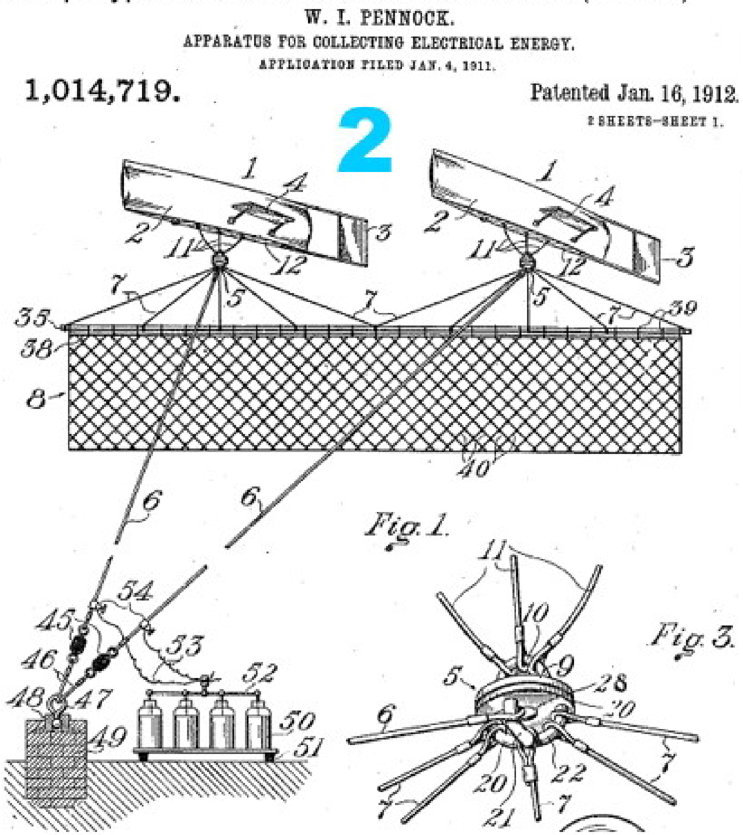


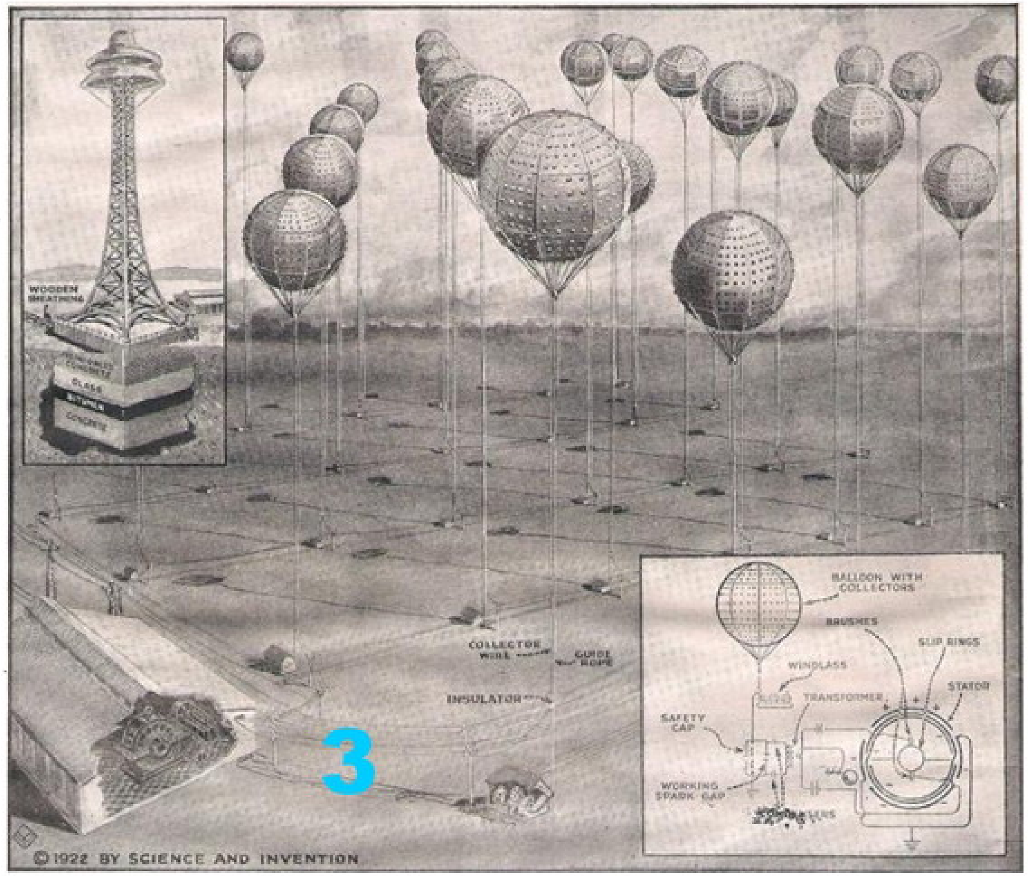
1. Mahlon Lumis (США) уже в середине XIX века применил пламенные ионизаторы для питания атмосферным электричеством телеграфной связи в Западной Вирджинии
2. Walter Pennock (США) предложил систему для собирания атмосферного заряда на сетки, подвешенные к аэростатам из металлизированной ткани. Энергия накапливалась в лейденских банках
3. Herman Plauson (Германия) впервые предложил полную систему для получения и преобразования атмосферного электричества в энергию обычного стандарта. Электрический заряд, накапливаемый поверхностью приемников, с помощью инвертора превращался в ток промышленного стандарта. Мощность опытных установок от 0,72 до 3,4 кВт.
4. Современная установка для питания от атмосферного электричества метеорологической аппаратуры. Россия. Патент RU 2245606 (2003 г.)

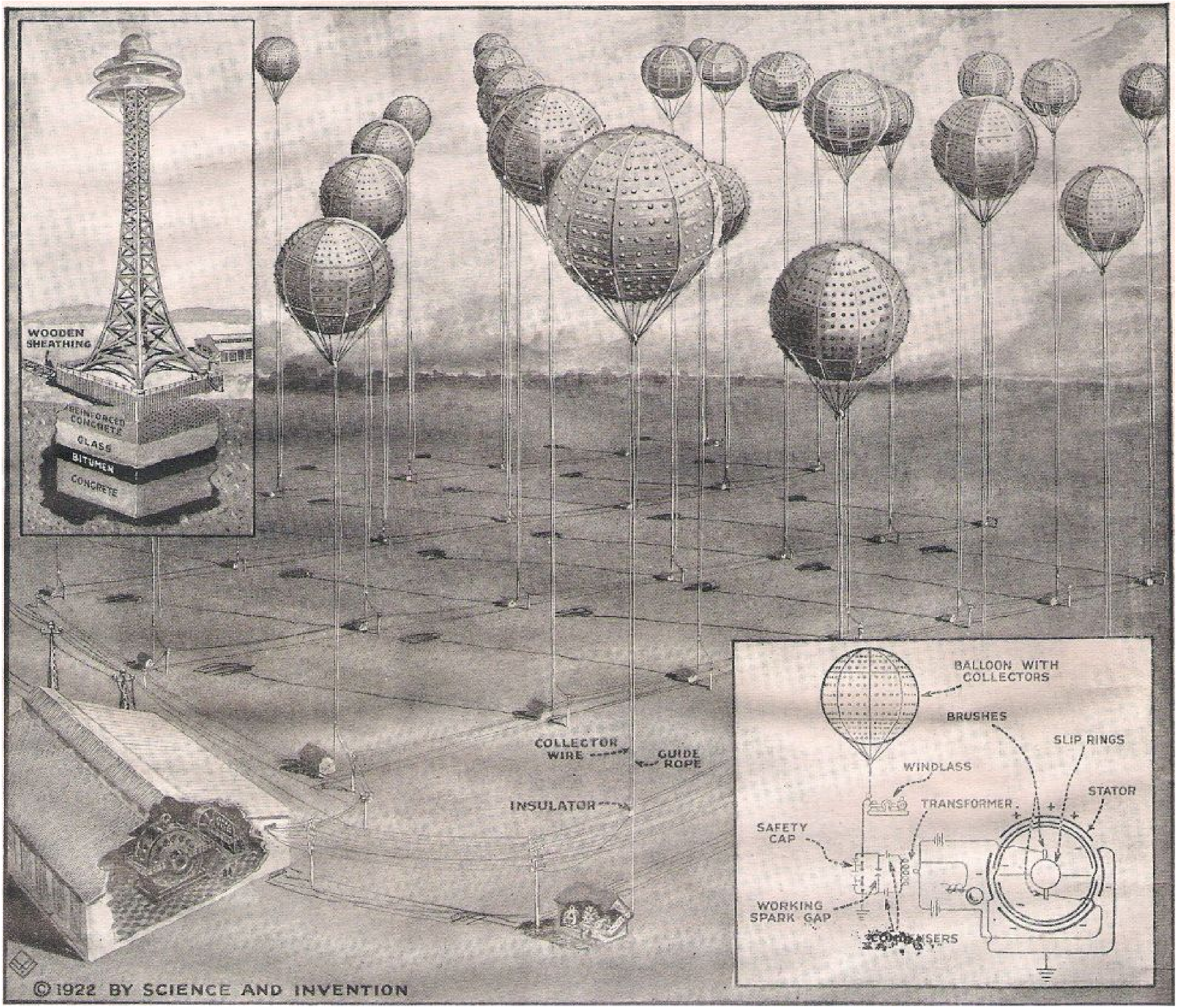


Methods Suggested by Loomis for the Harnessing of Electricity from the Atmosphere








WOODEN SHEATHING
REINFORCED CONCRETE
GLASS
BITUMEN
CONCRETE
COLLECTOR WIRE
GUIDE ROPE
INSULATOR
BALLOON WITH COLLECTORS
BRUSHES
SLIP RINGS
WINDLASS
STATOR
TRANSFORMER
SAFETY CAP
WORKING SPARK GAP
© 1922 BY SCIENCE AND INVENTION

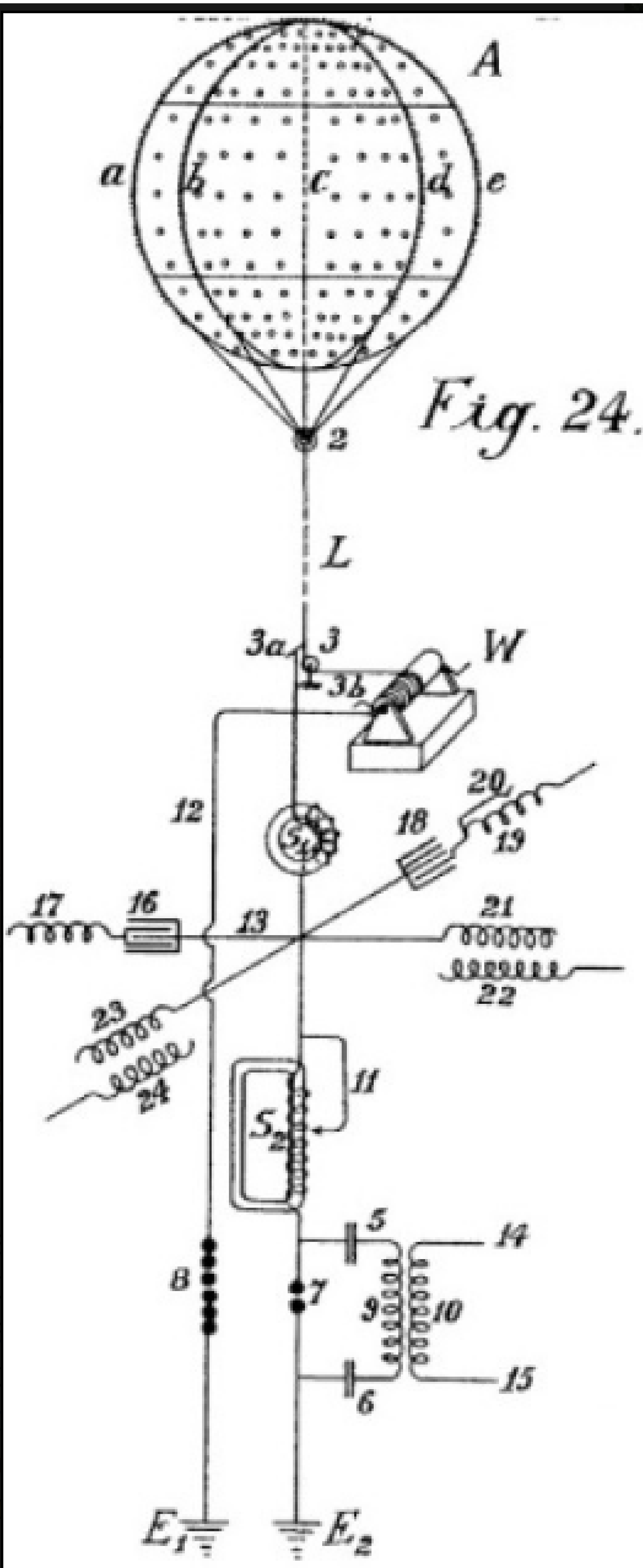
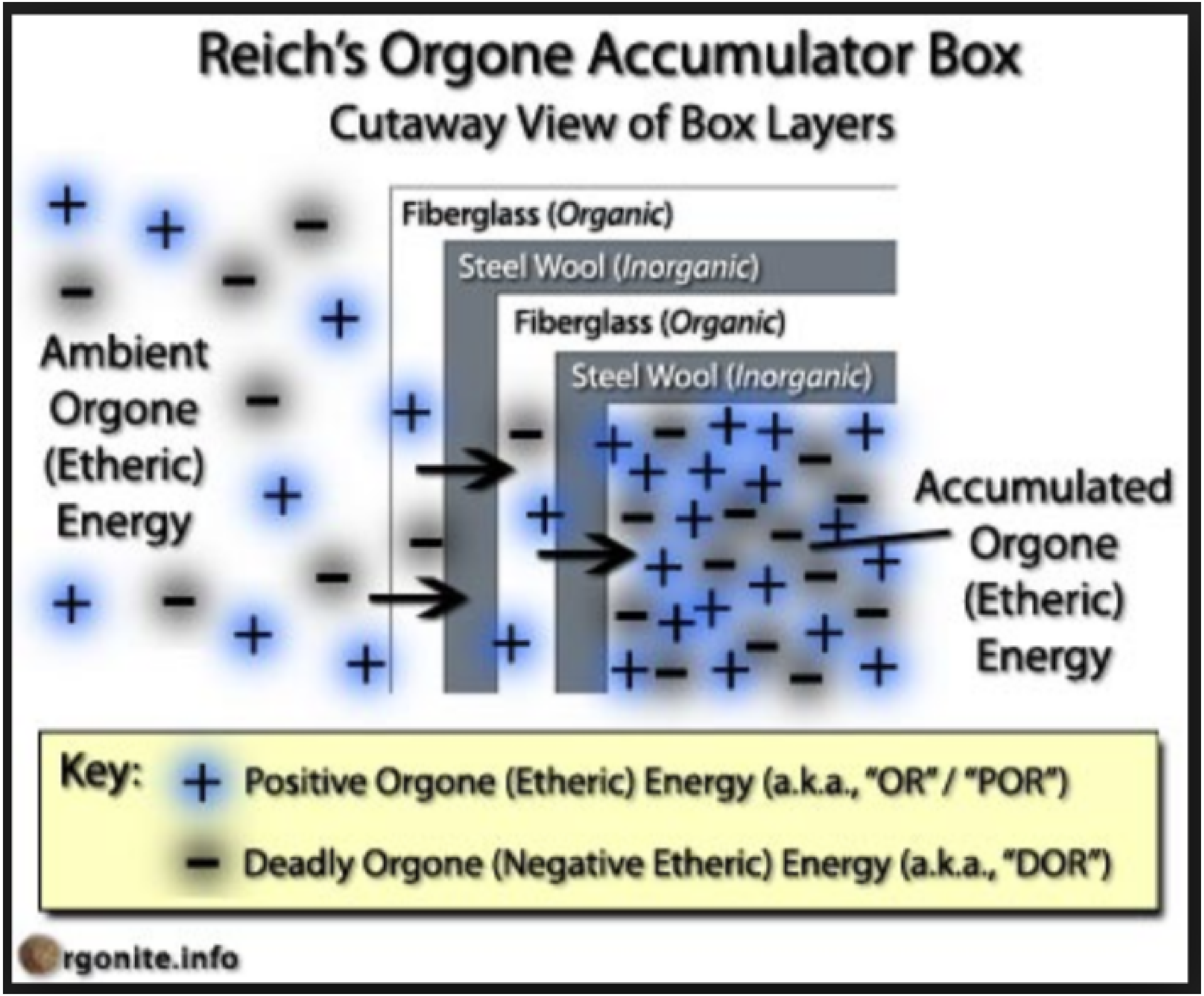

A
a
b
c
d
e
2
L
3a
3
3b
W
12
20
18
19
S_4
17
16
13
21
22
23
24
11
S_2
5
14
8
7
9
10
15
6
E_1
E_2

Fig. 24.


Reich's Orgone Accumulator Box
Cutaway View of Box Layers
Fiberglass (Organic)
Steel Wool (Inorganic)
Fiberglass (Organic)
Steel Wool (Inorganic)
Ambient Orgone (Etheric) Energy
Accumulated Orgone (Etheric) Energy
Key:
+ Positive Orgone (Etheric) Energy (a.k.a., "OR" / "POR")
– Deadly Orgone (Negative Etheric) Energy (a.k.a., "DOR")
rgonite.info

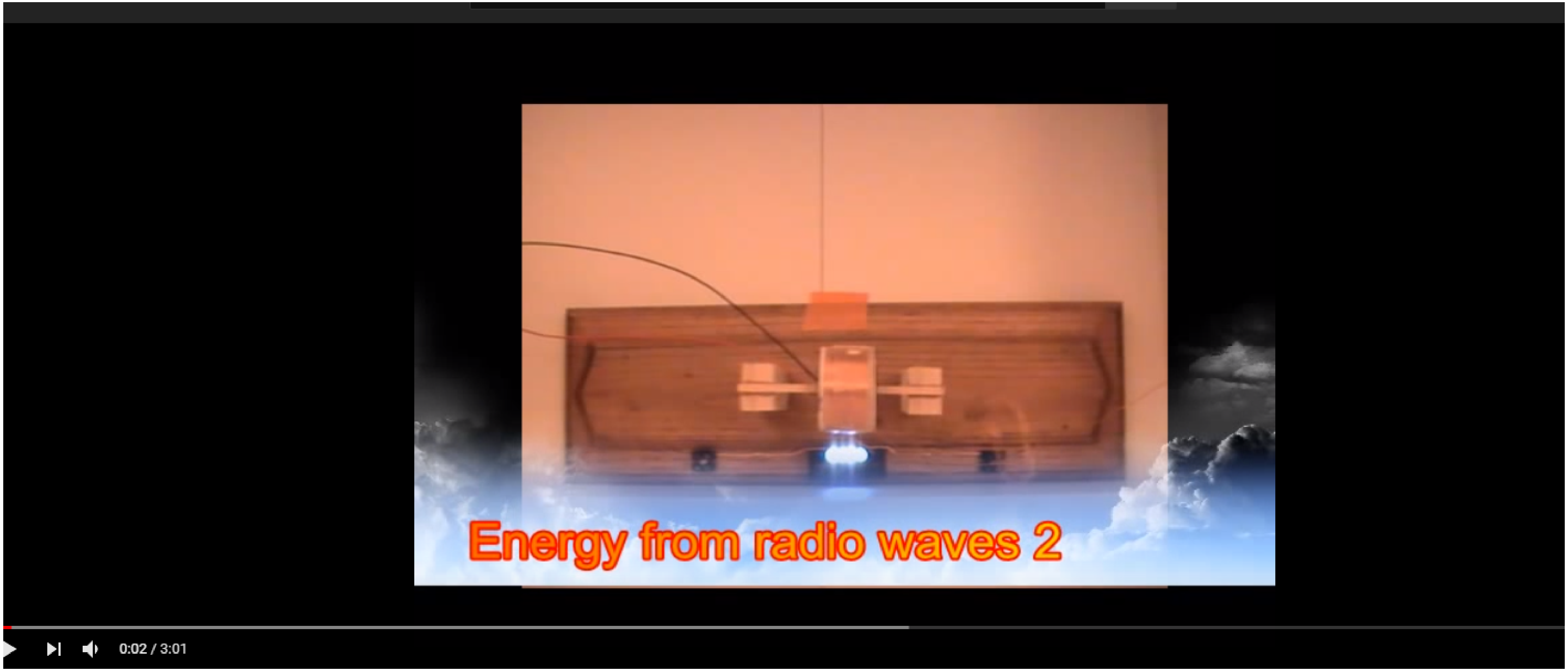
2. Insert metal electrodes and attach multimeter leads [copper (+), aluminum (-)] For measuring direct current voltage: set multimeter function switch to "DCV: 20" take a reading in volts DC. for measuring direct current: set multimeter function switch to "DCA: 20m" take a reading in milliamps (mA) DC.

Lawn battery (summer). INSET: Marsh mud battery. (Circles show position of electrodes.)

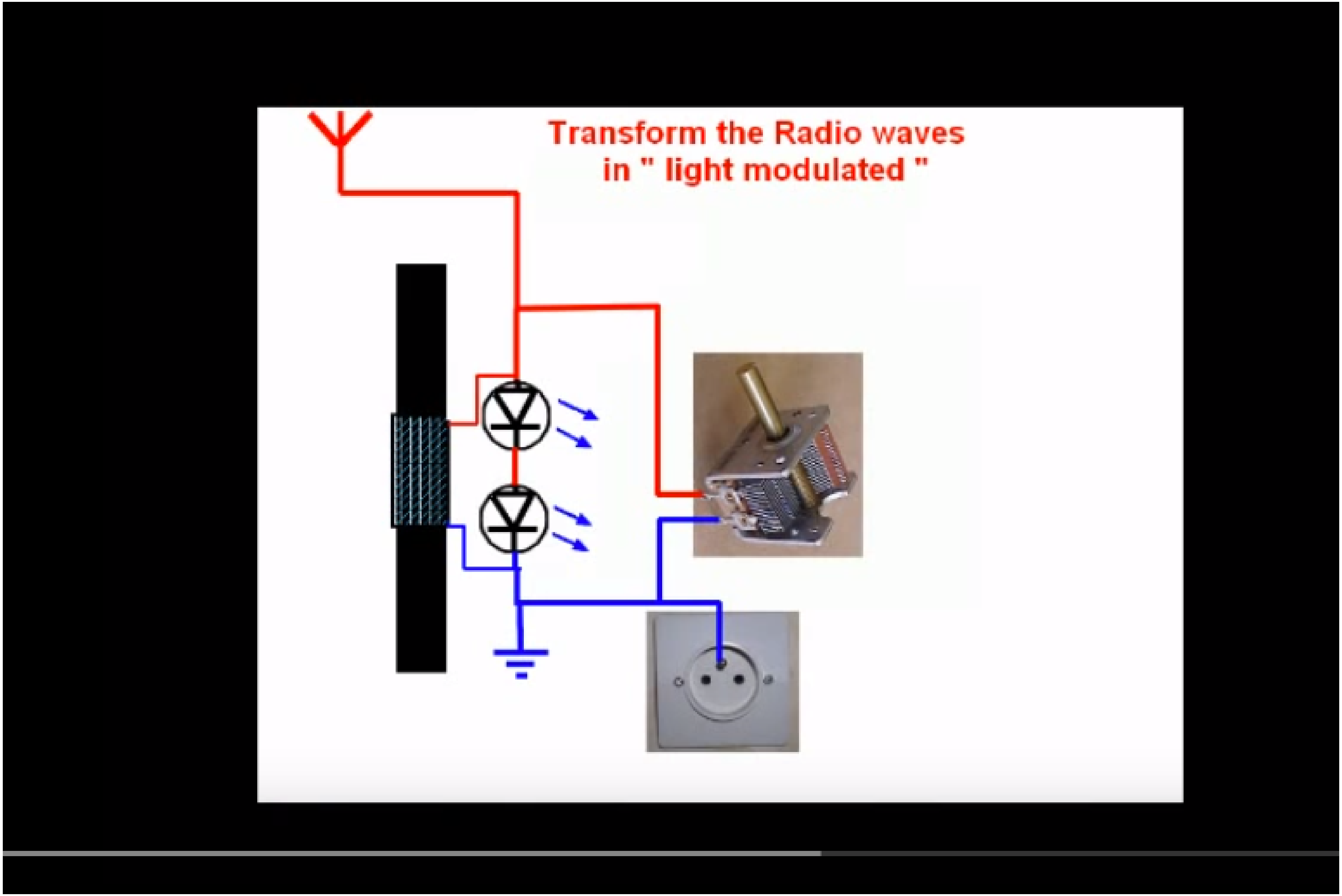
Calculating Earth Battery Power (W = I * V)

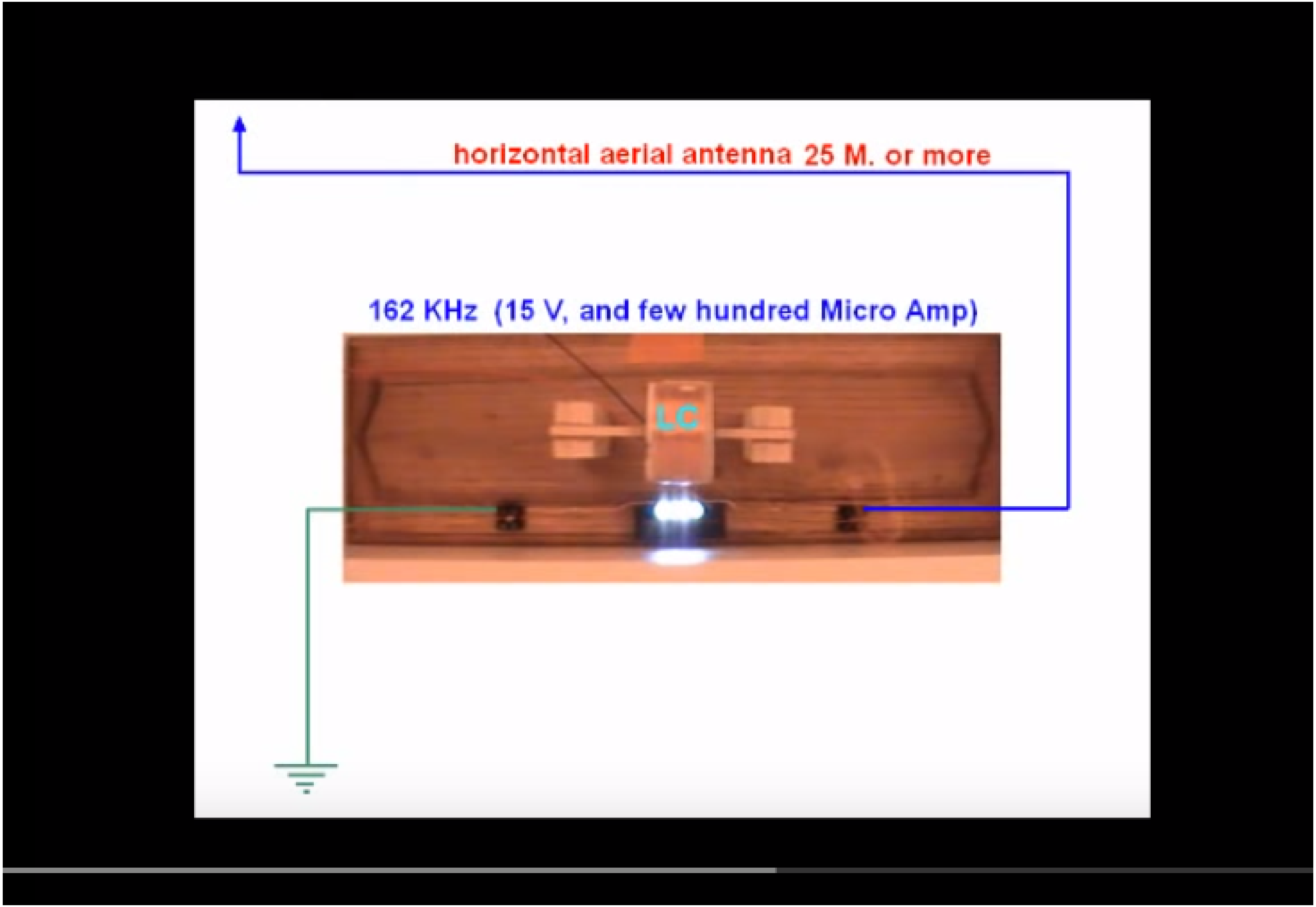
EXAMPLE: A lawn battery in late summer (little rain) produces a 0.65V, 0.2mA current. A battery power calculation of 0.00013W (0.13mW).

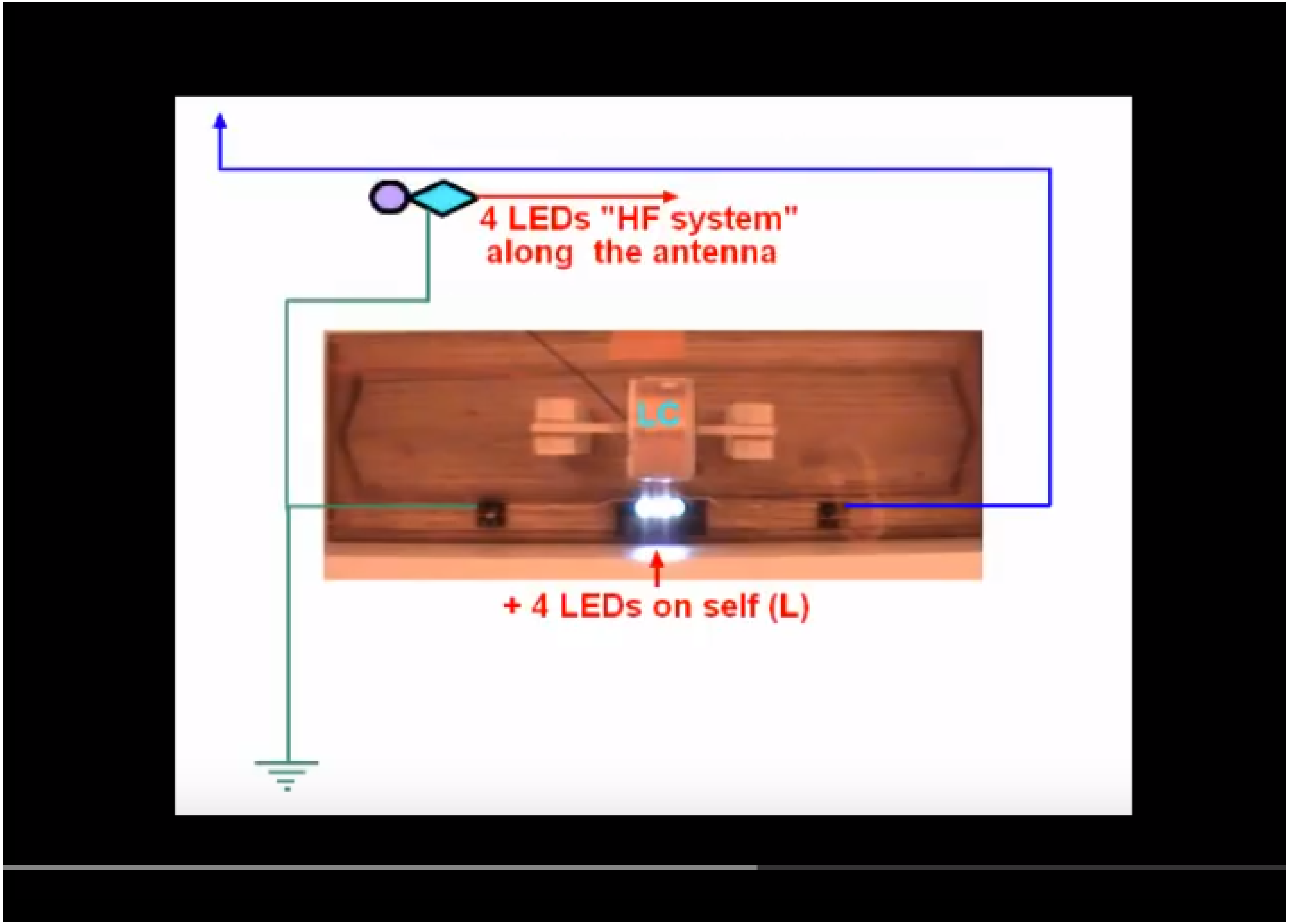
Powered by: PIXEL ink LLC

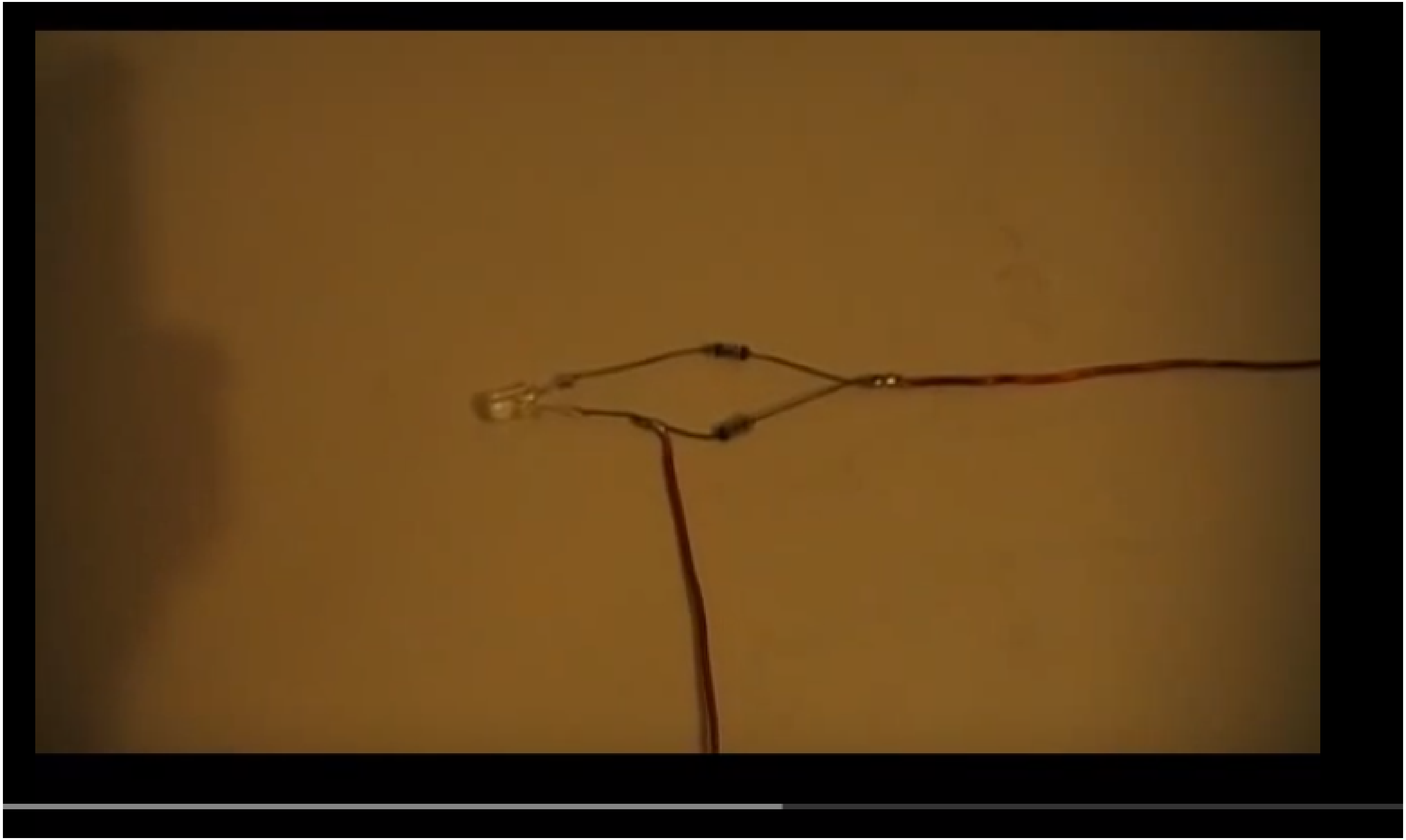


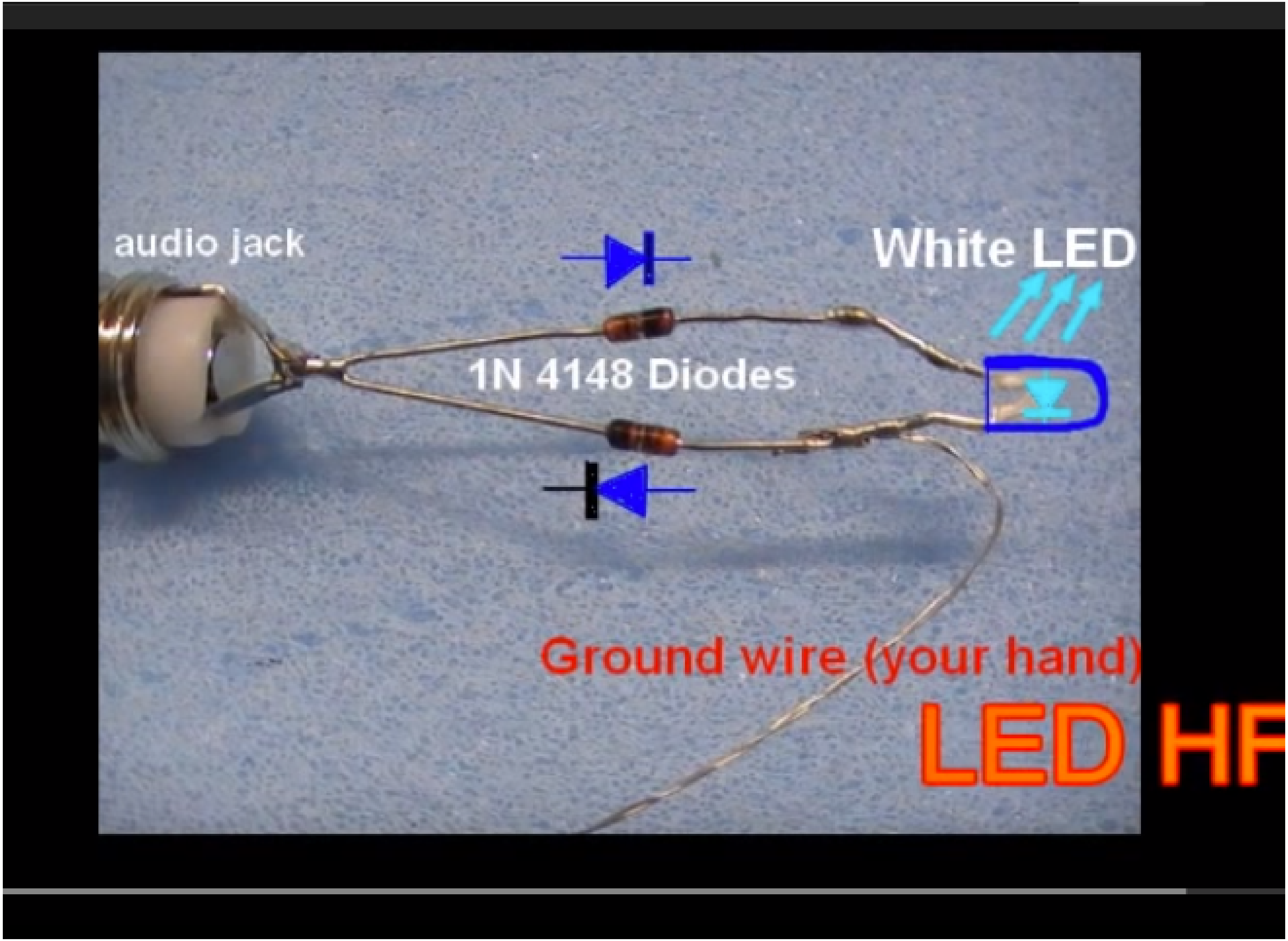
energy from radio waves 2


Transform the Radio waves
in " light modulated "

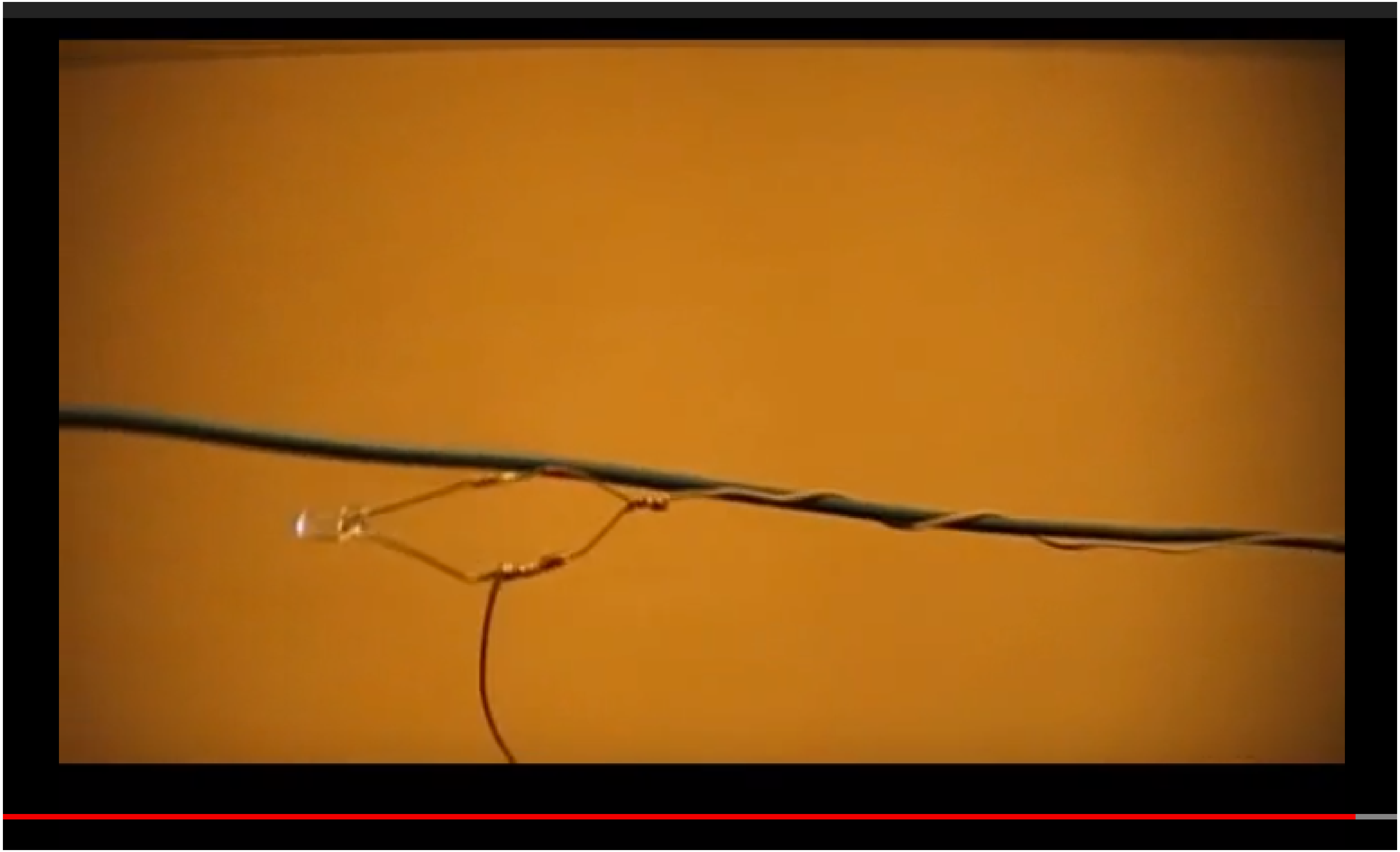

horizontal aerial antenna 25 M. or more
162 KHz (15 V, and few hundred Micro Amp)
LC


4 LEDs "HF system"
along the antenna
LC
+ 4 LEDs on self (L)

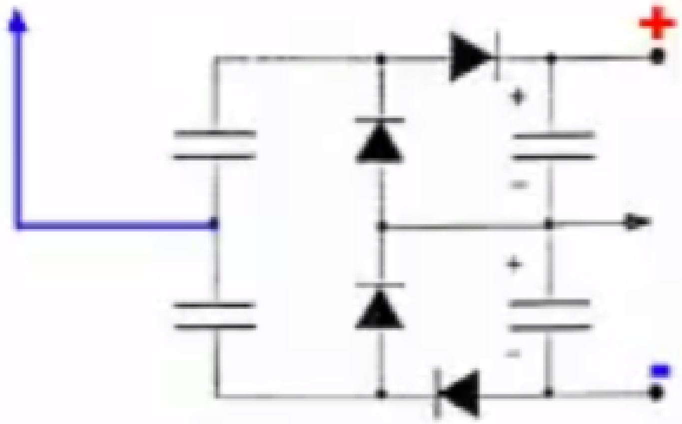


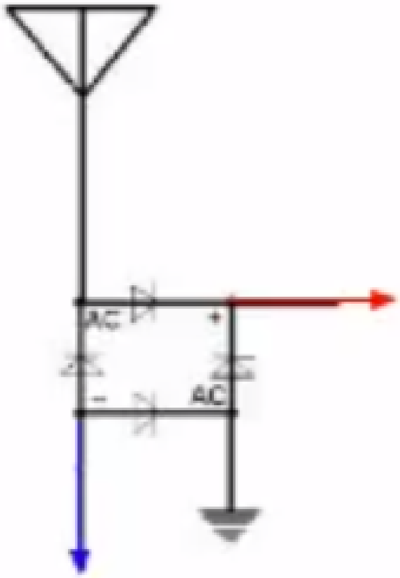

audio jack
White LED
1N 4148 Diodes
Ground wire (your hand)
LED HF

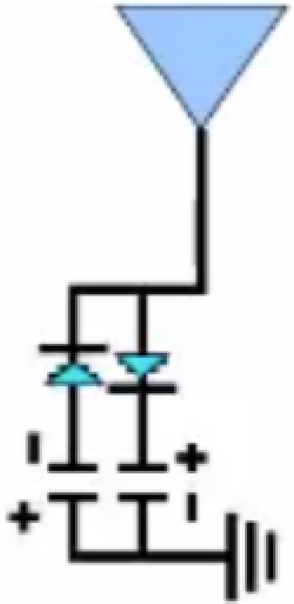

LED HF detector system



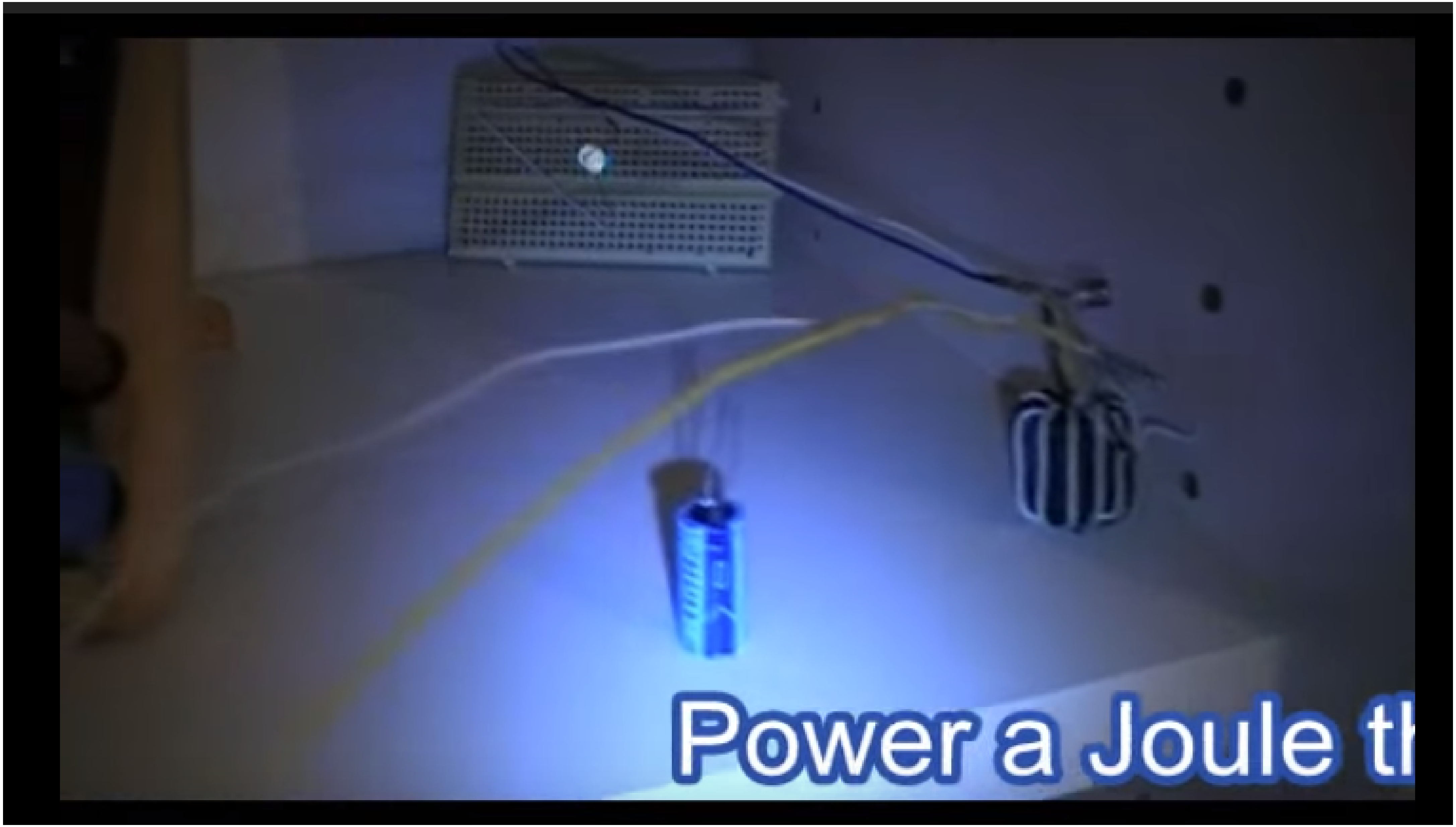
circuits used on LC "RadioWaves"

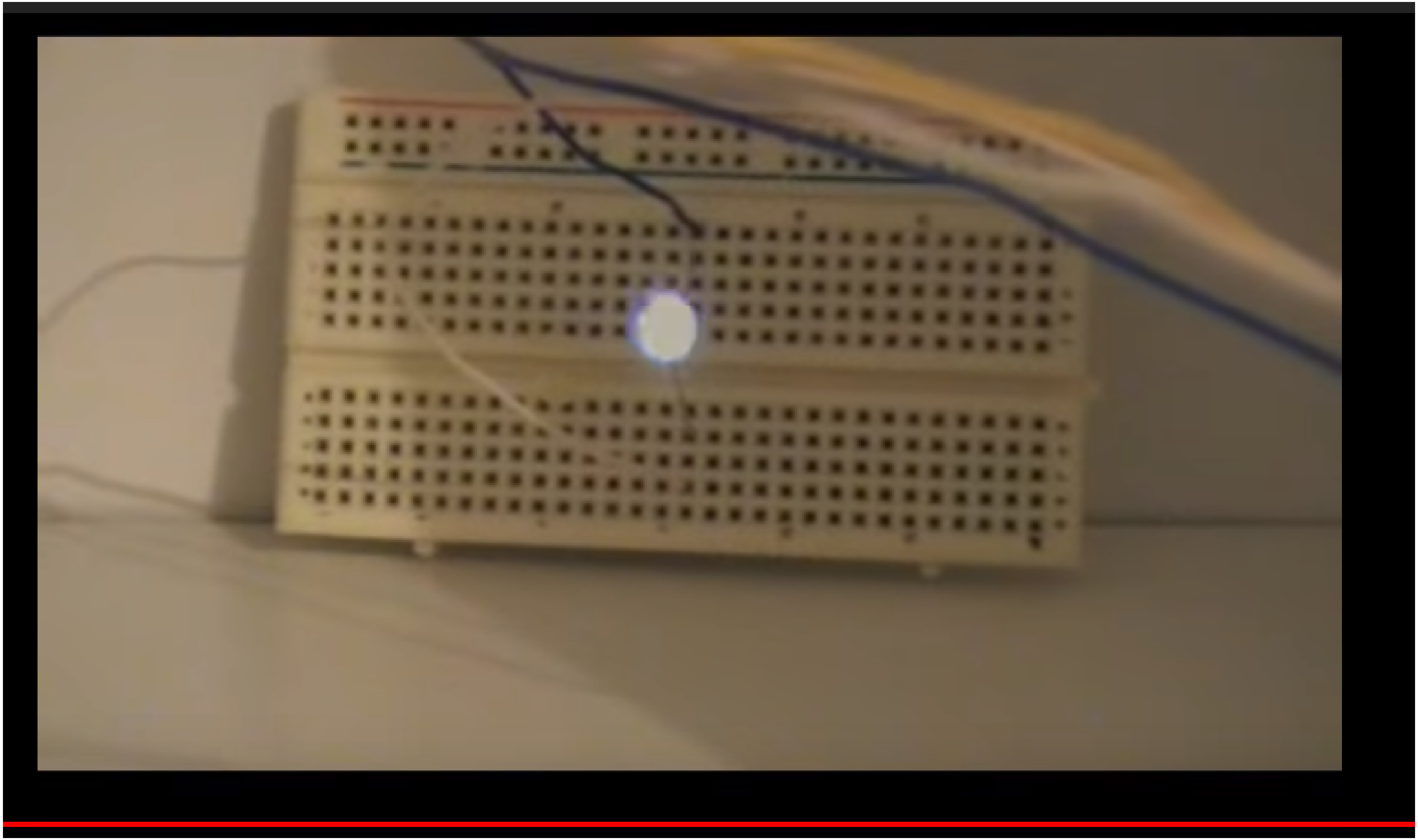


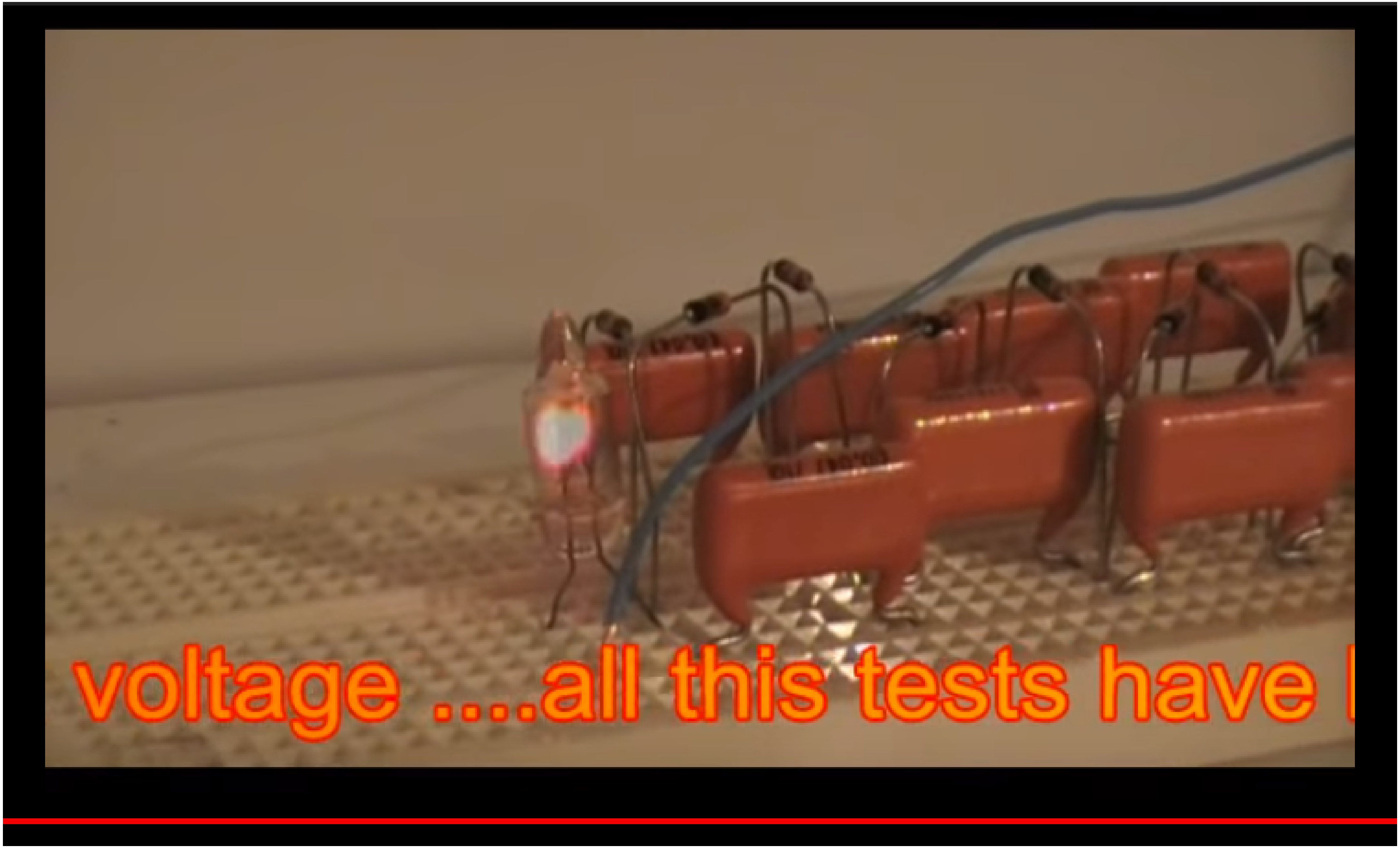




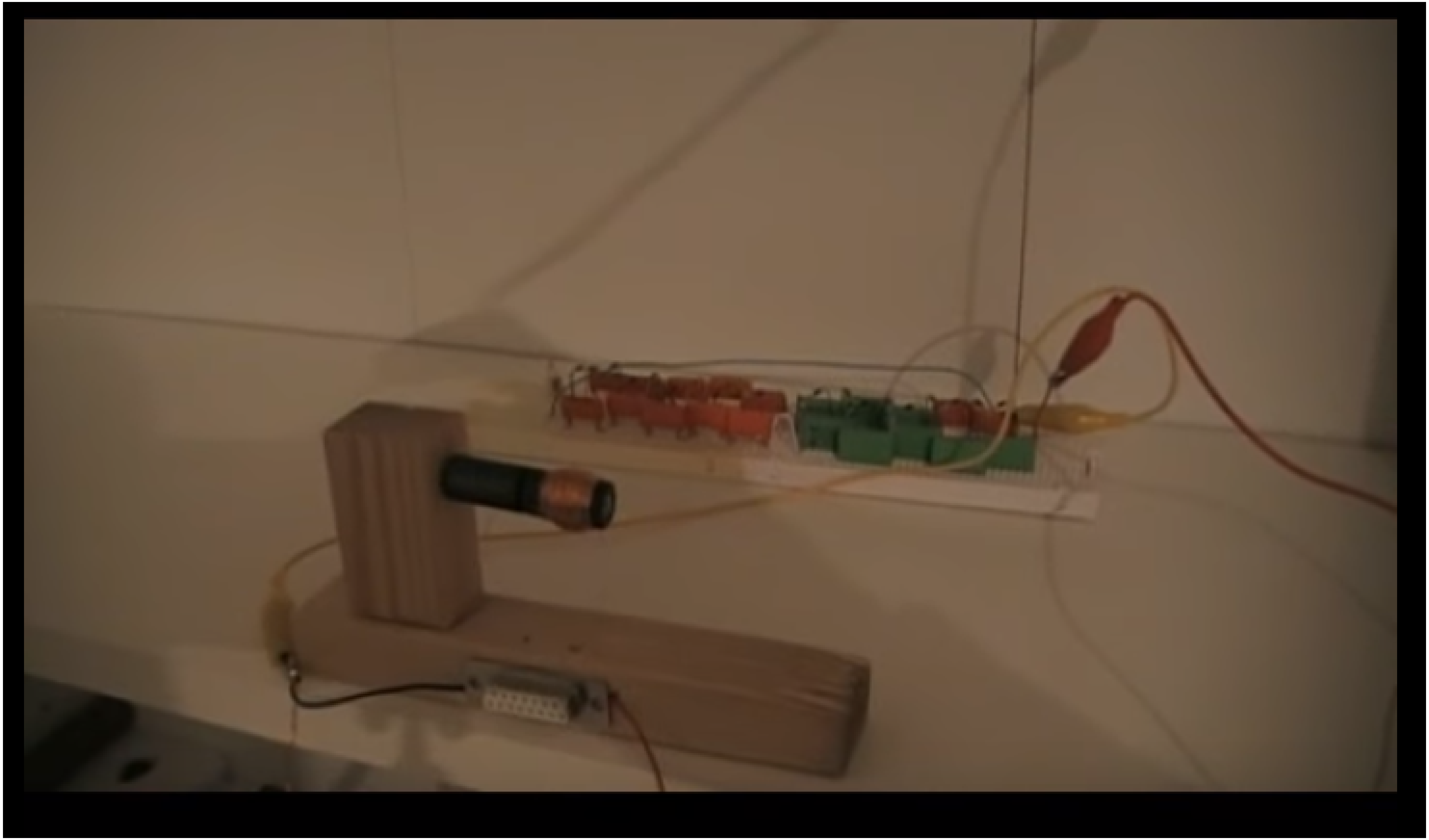
electricity from radiowaves 3


Power a Joule th




voltage ....all this tests have

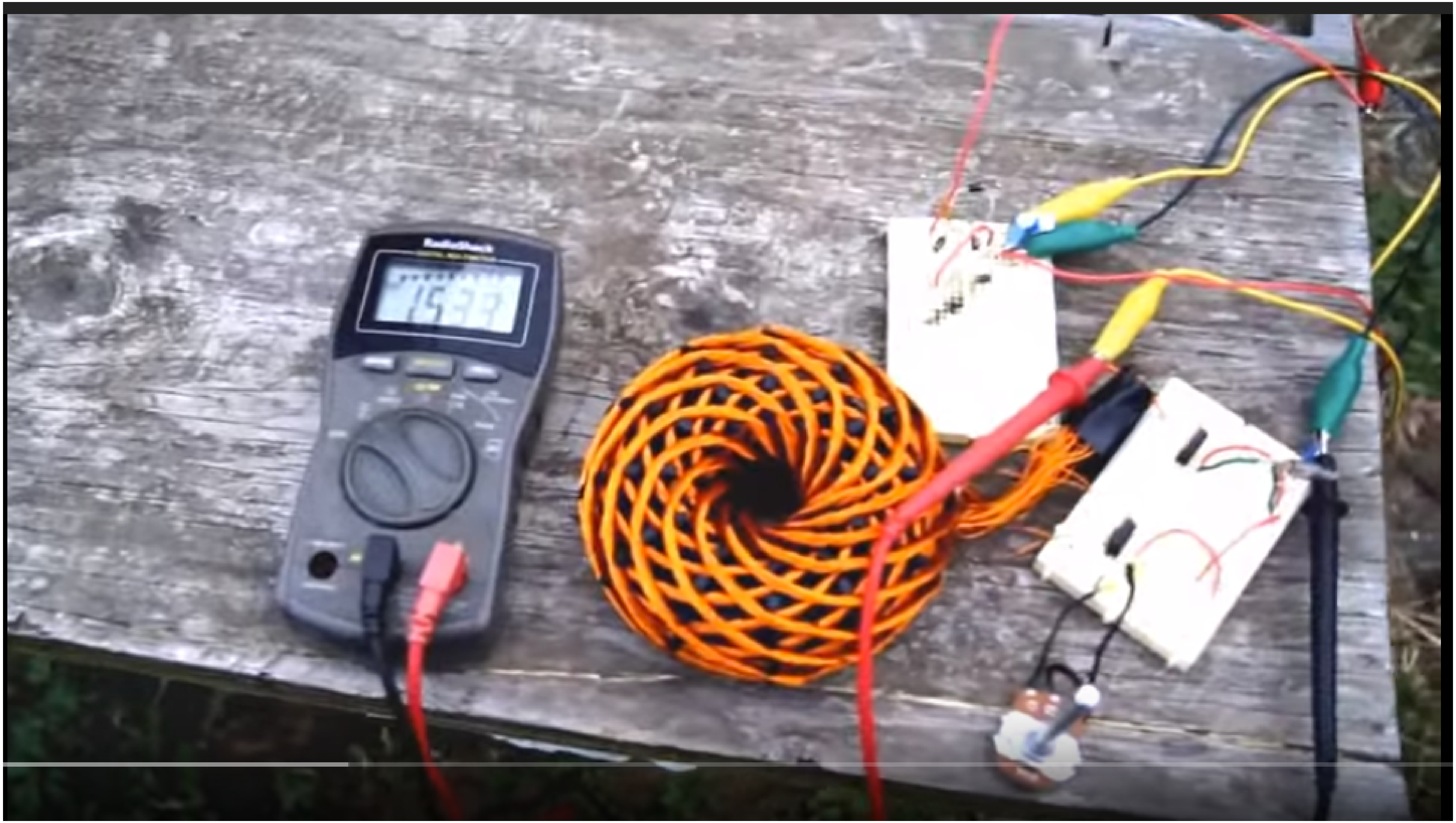

been made without battery

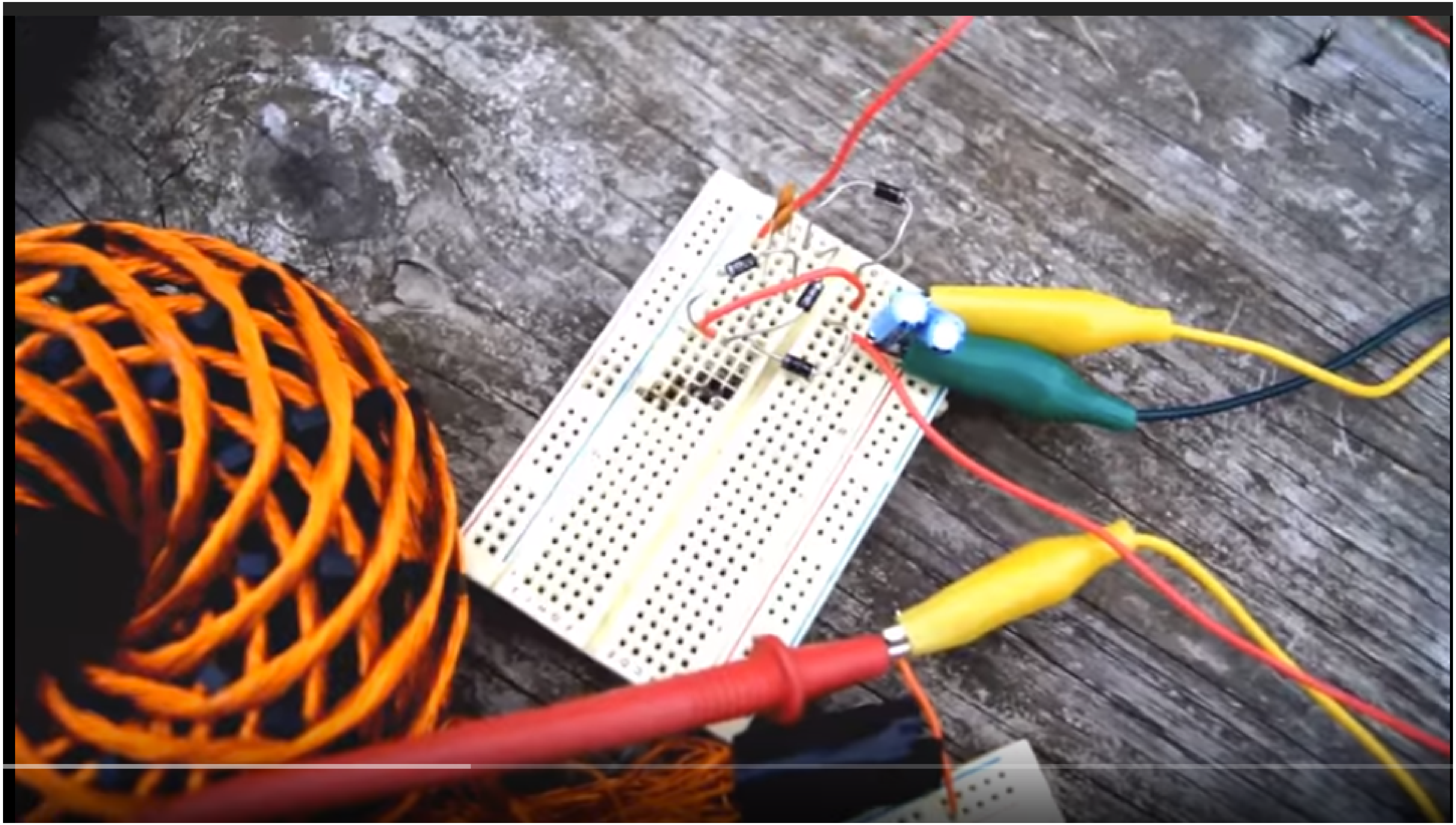


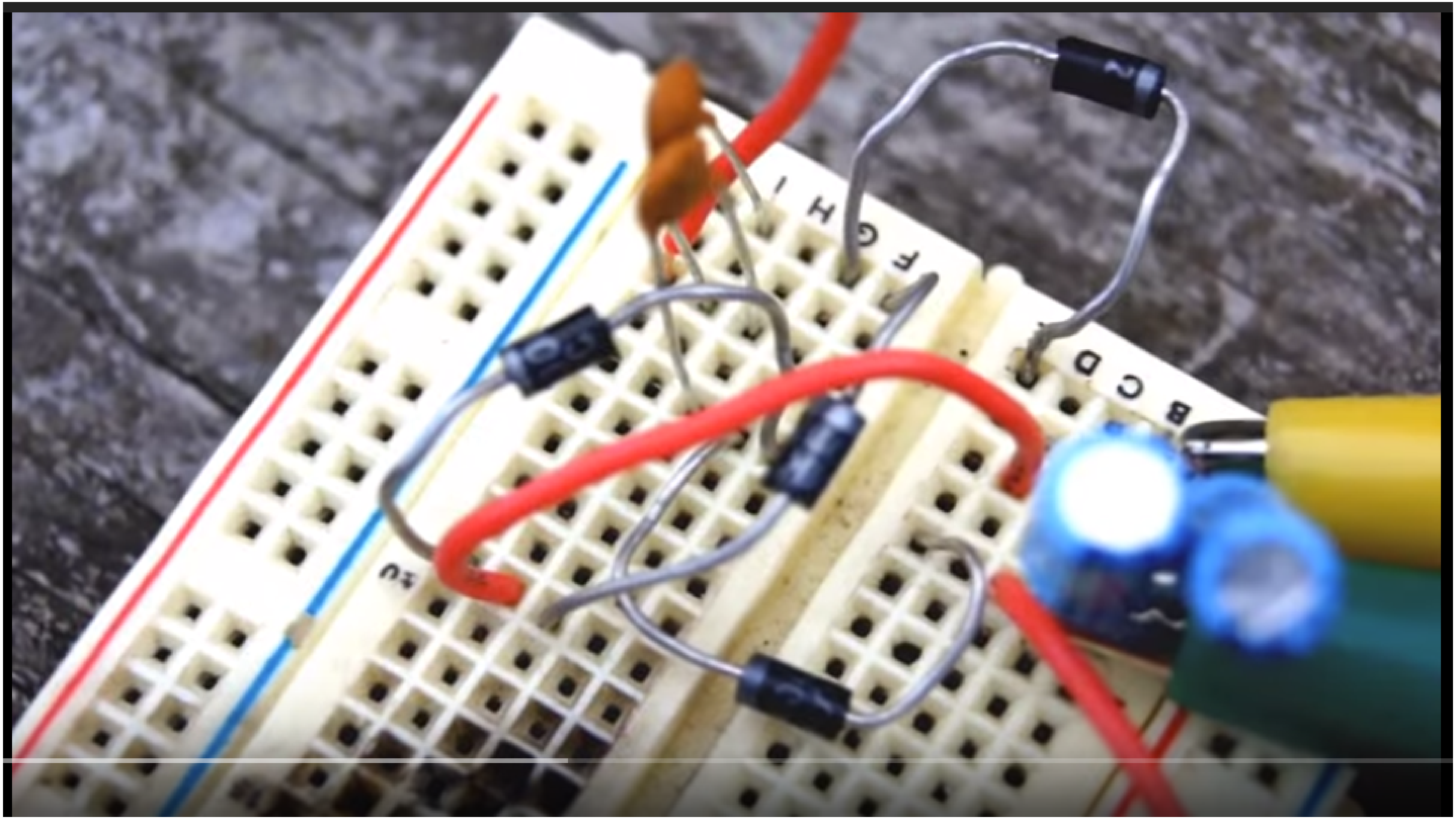
How to Collect Free Energy from Atmosphere | Free Energy

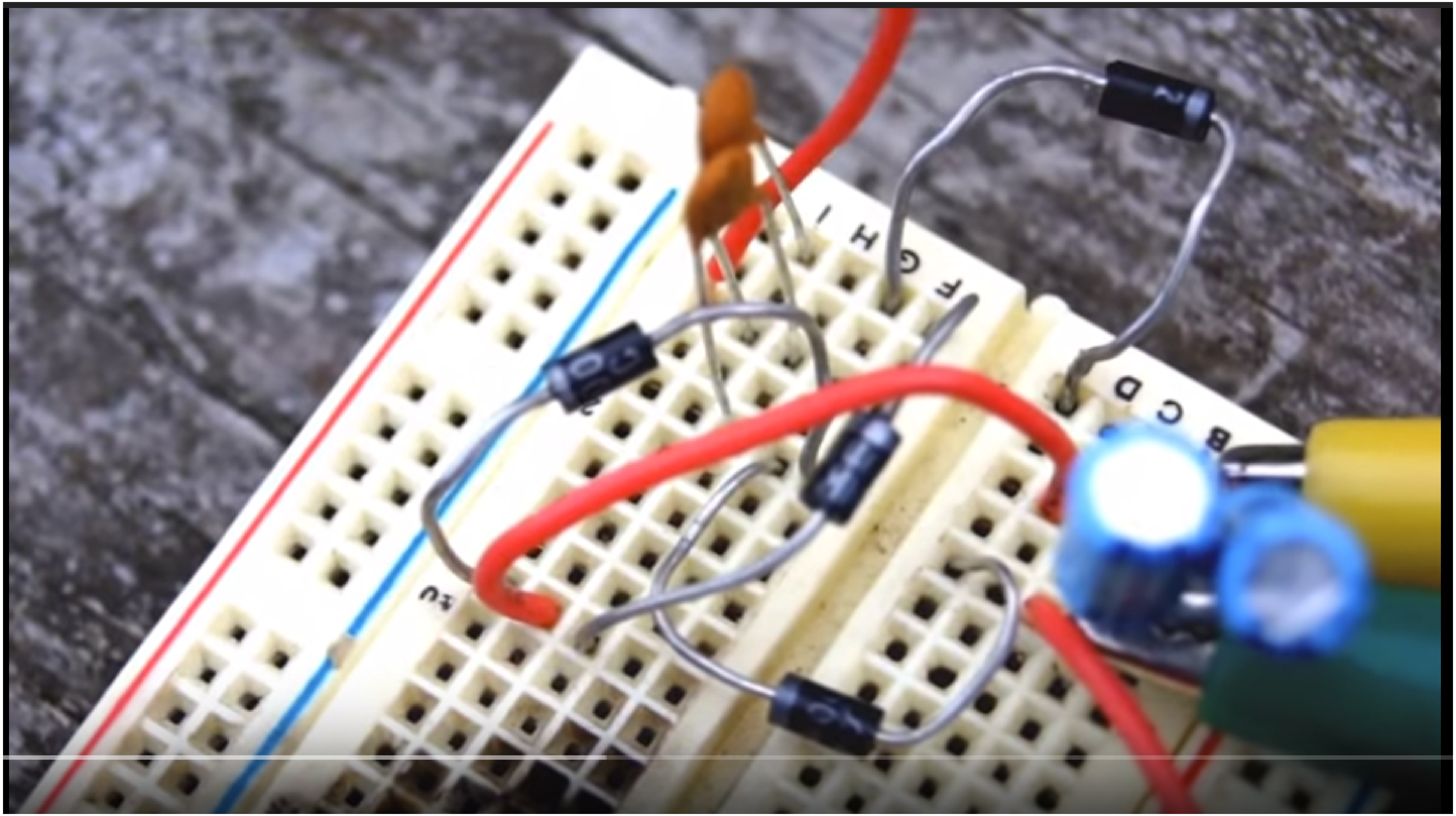
Up next

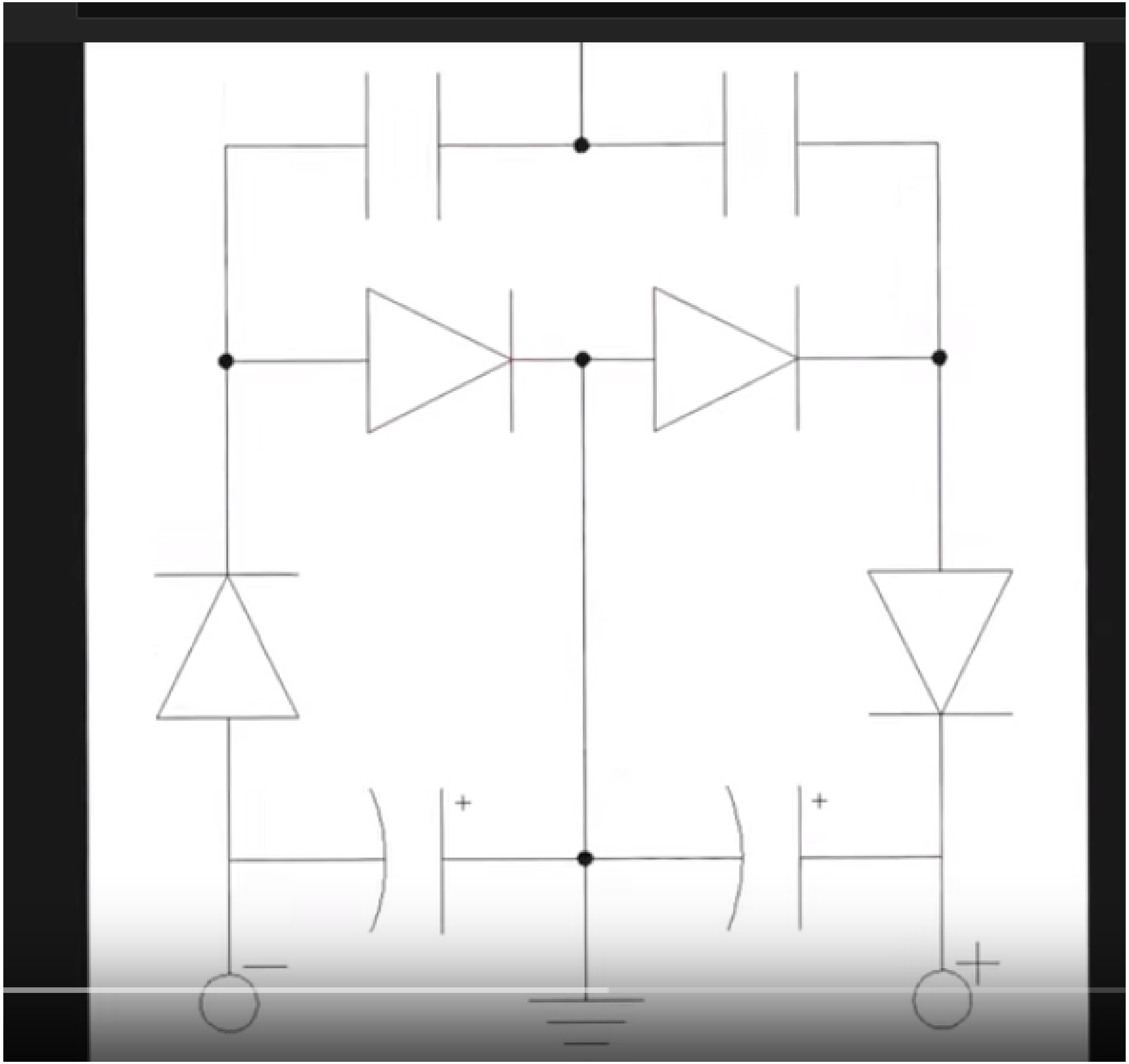

RadioShack
DIGITAL MULTIMETER
RANGE
SELECT
HOLD
AAA
9V

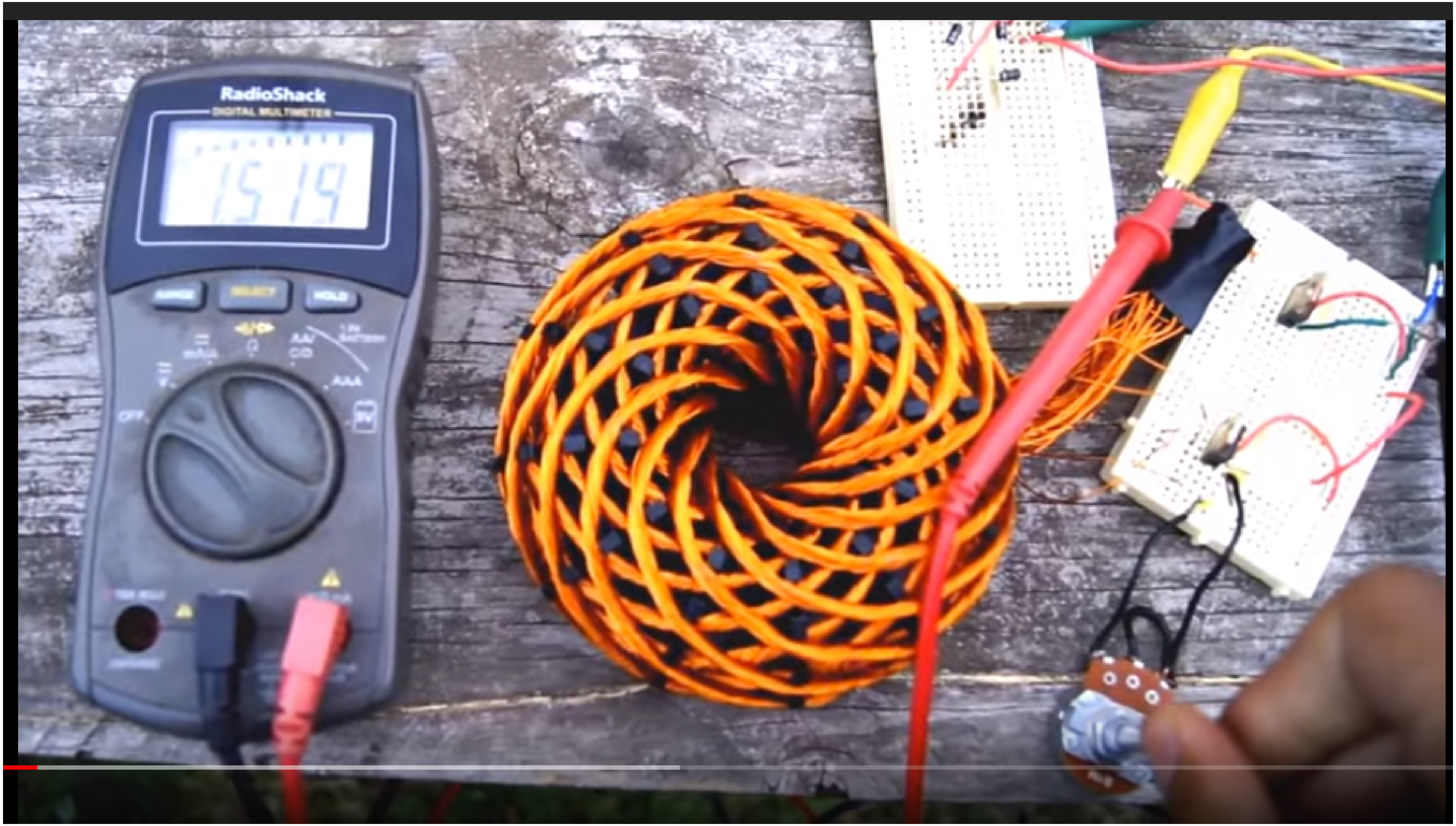


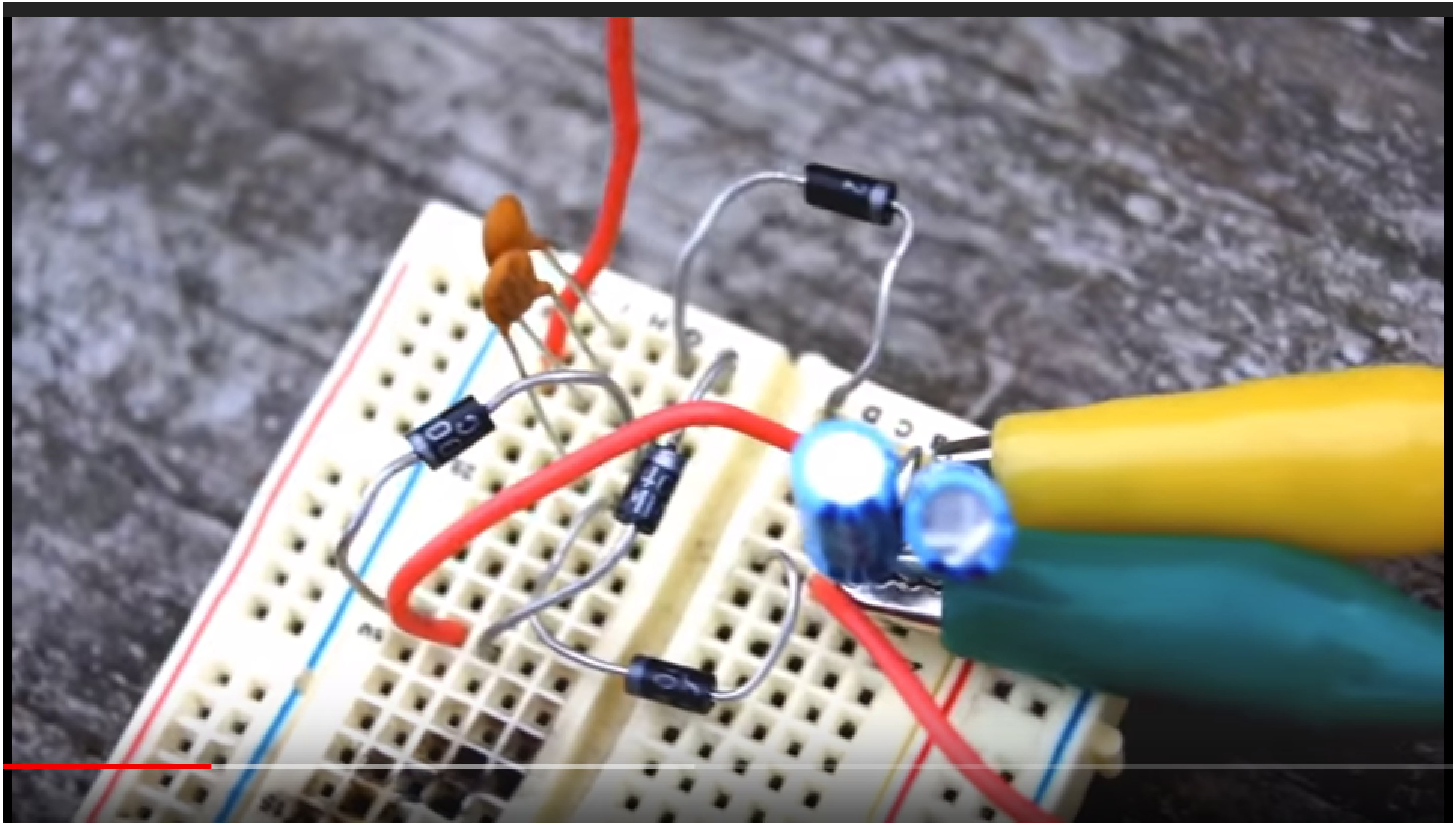


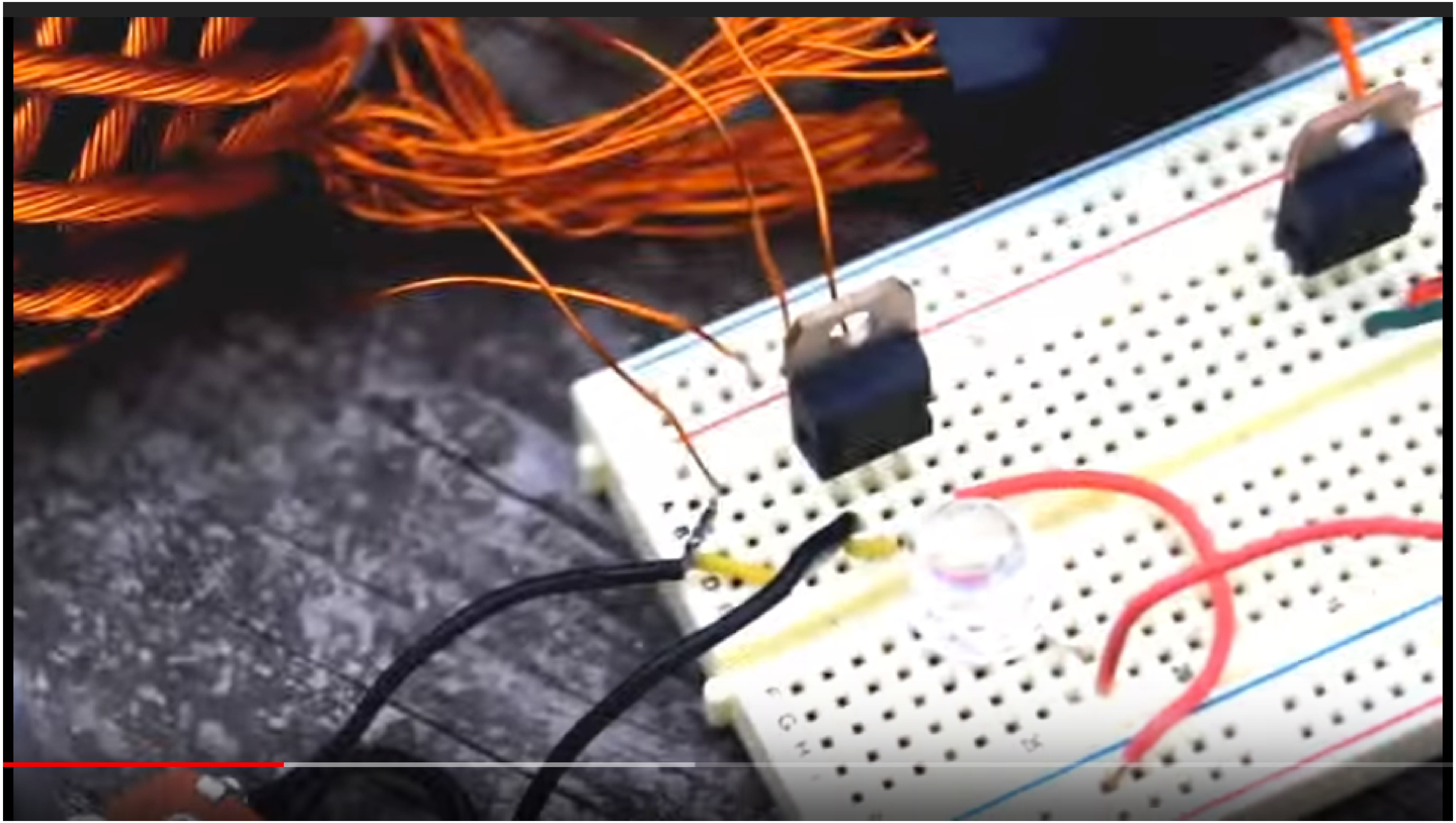


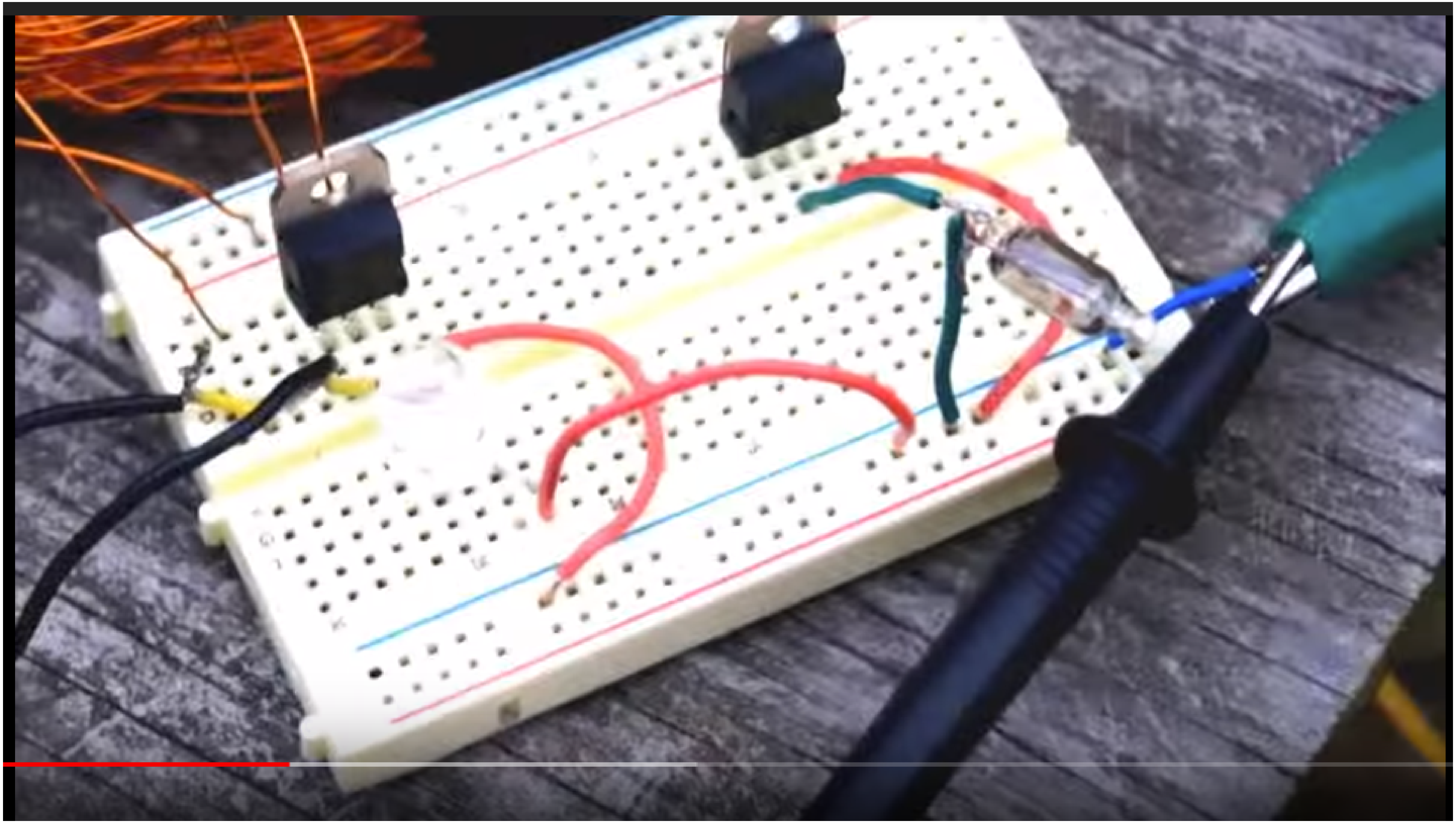

I H G F
D C B

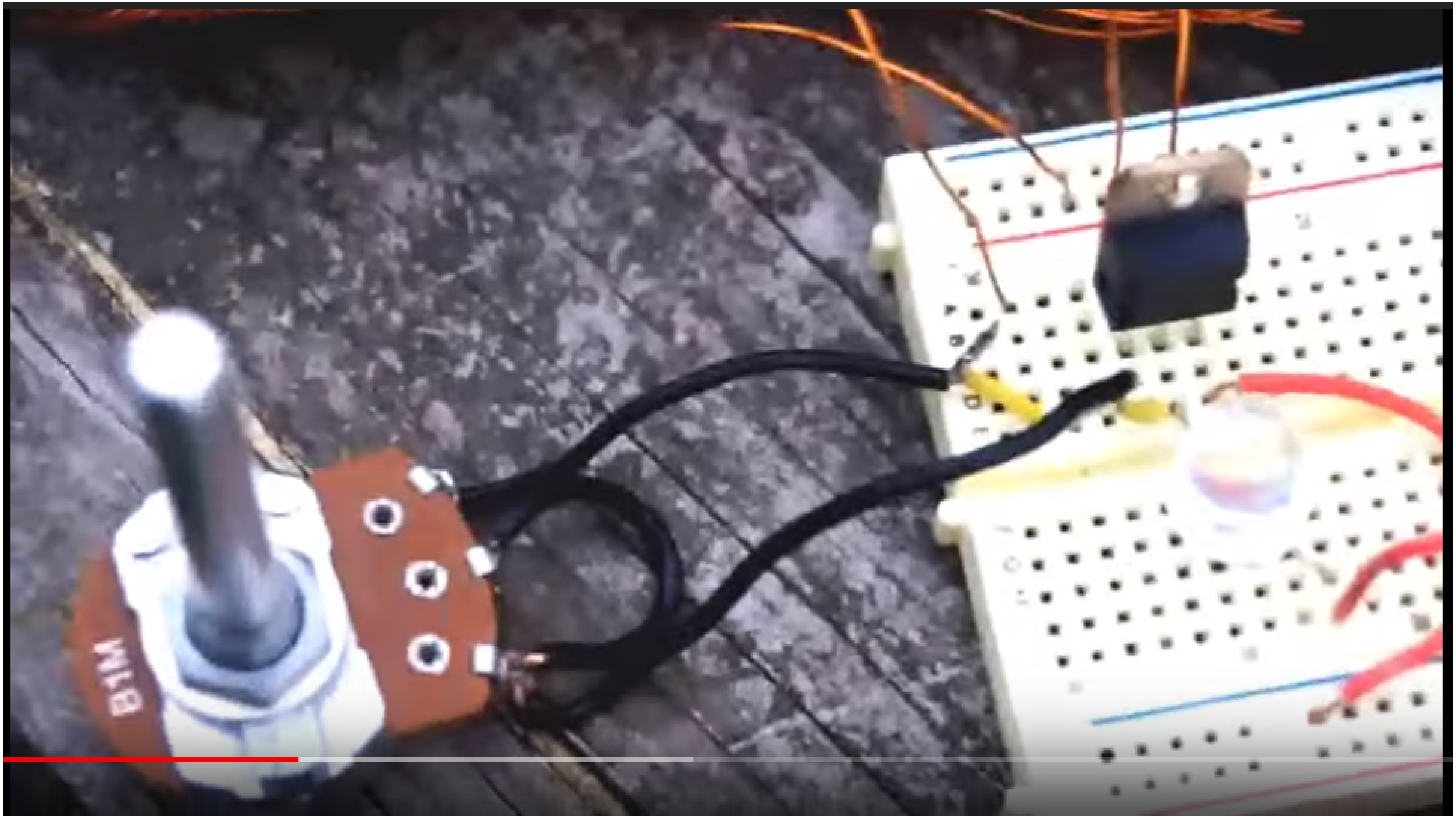


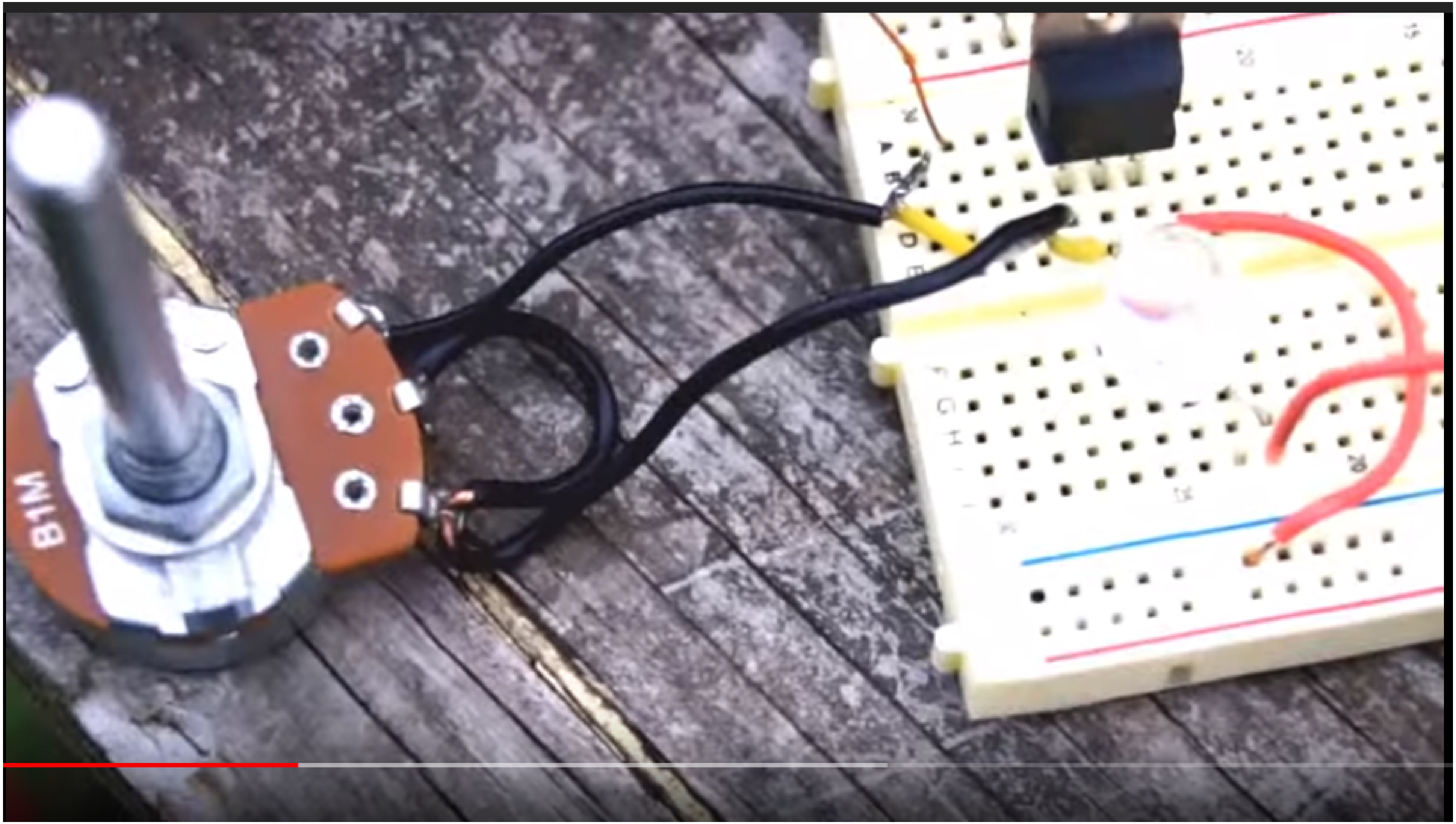

RadioShack
DIGITAL MULTIMETER

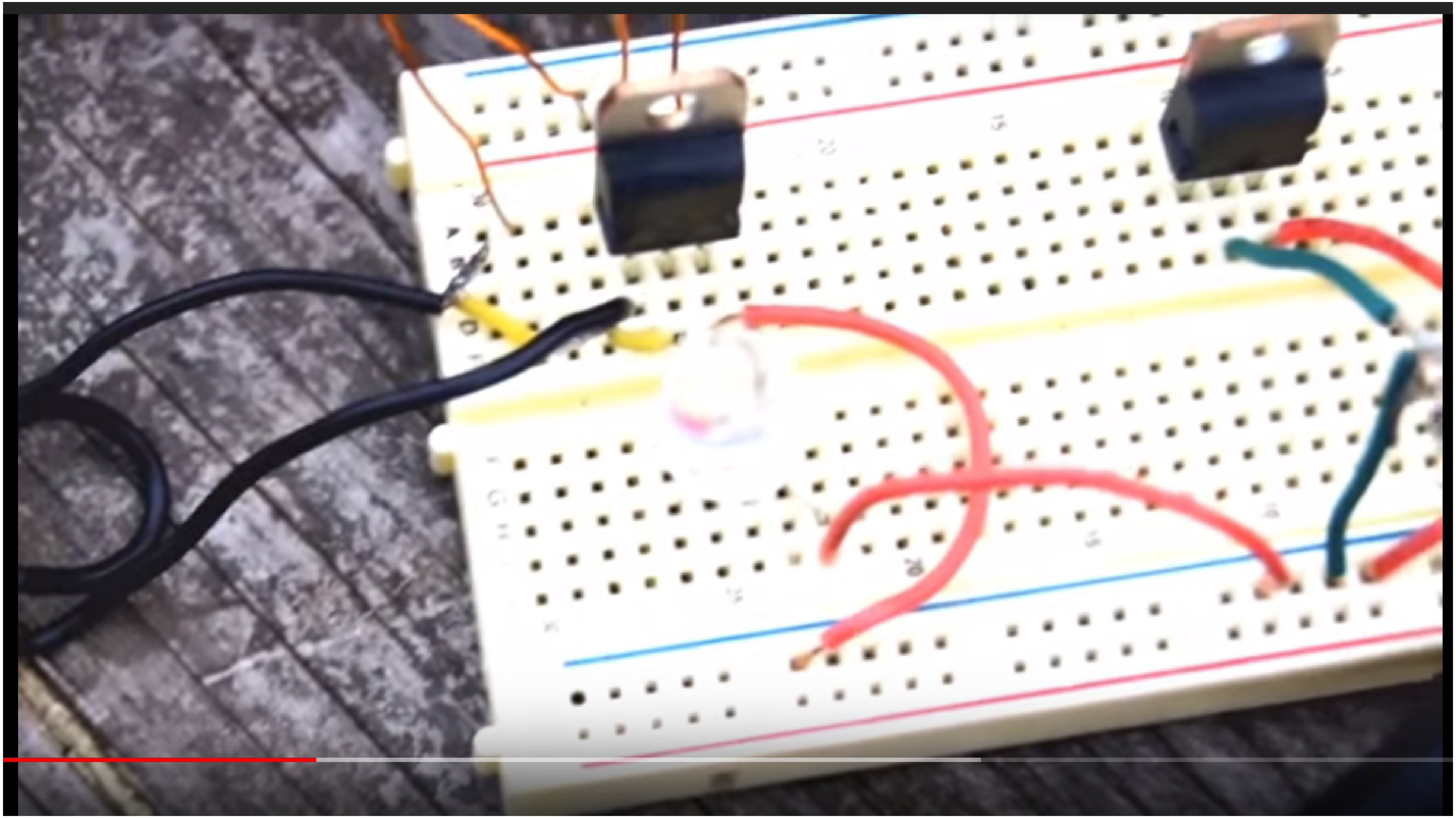


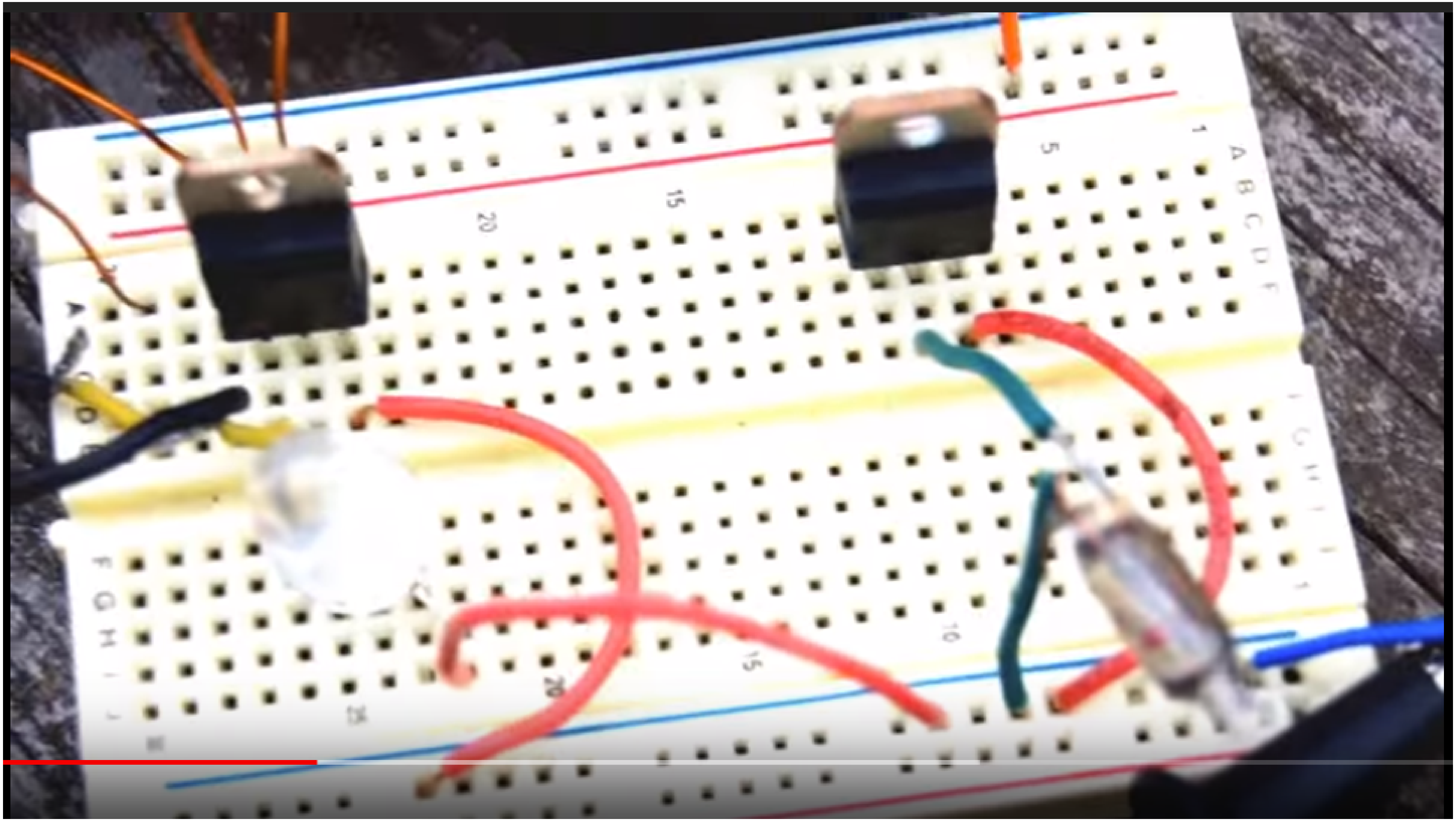


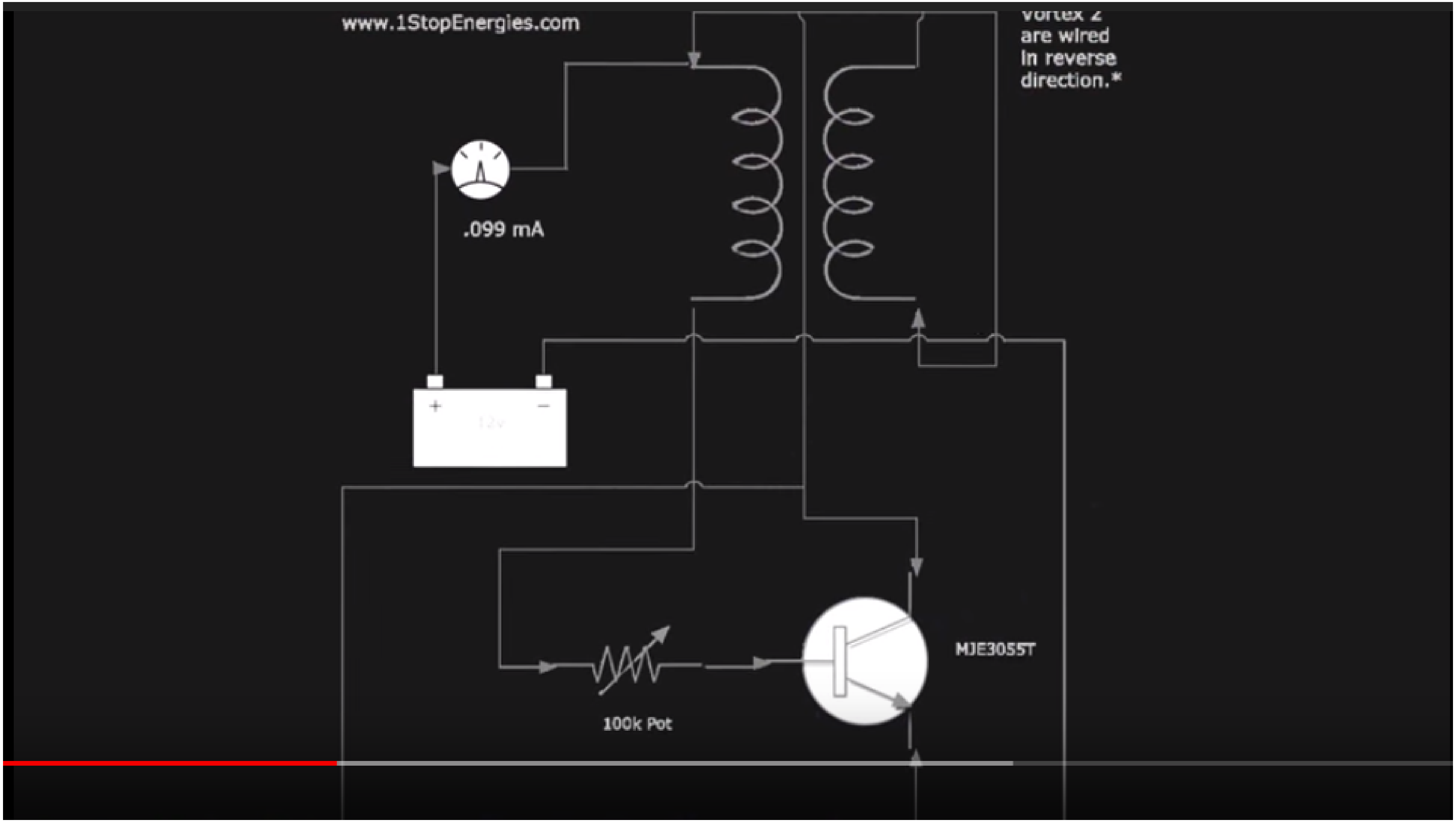



B1M

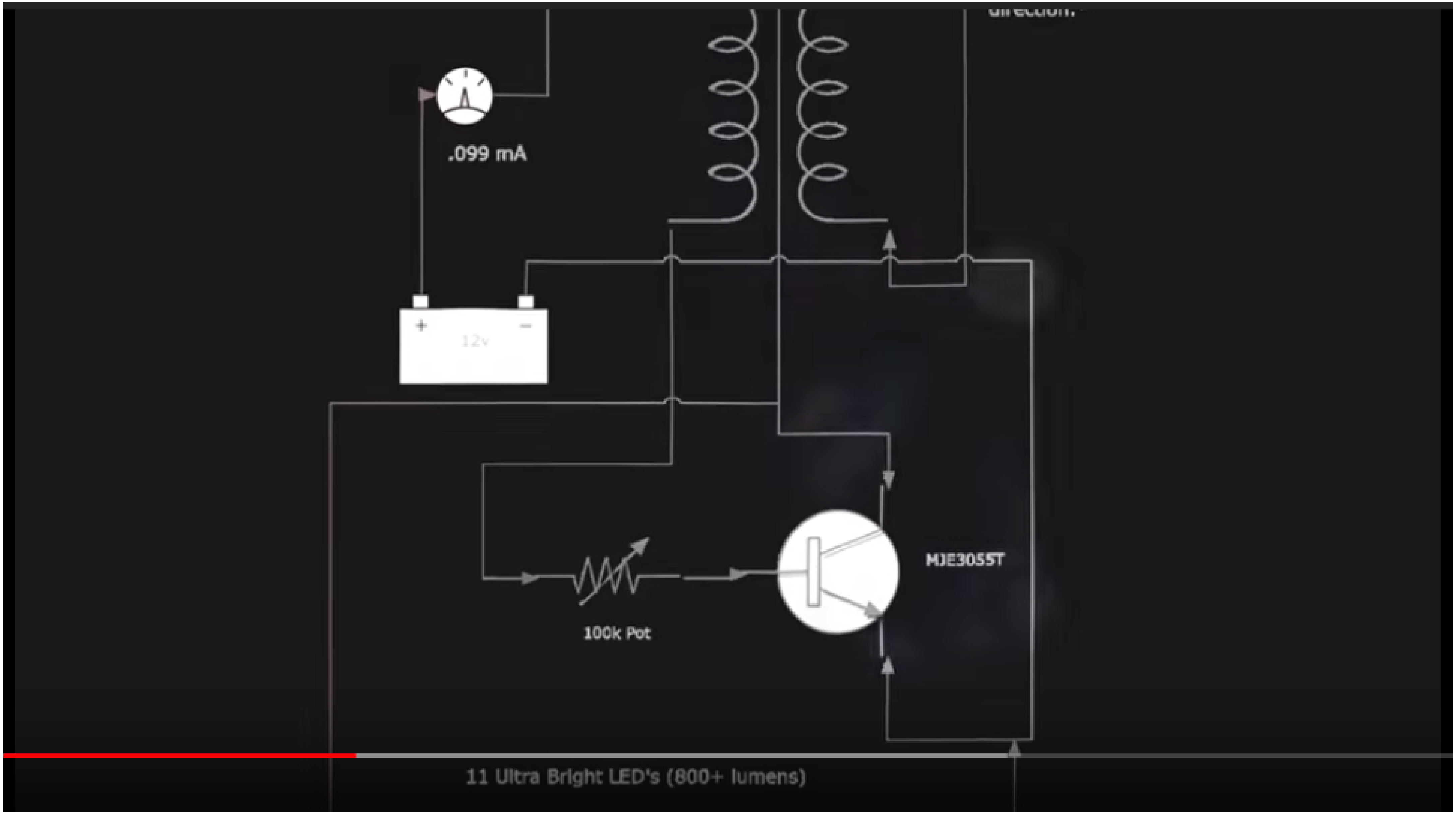

B1M

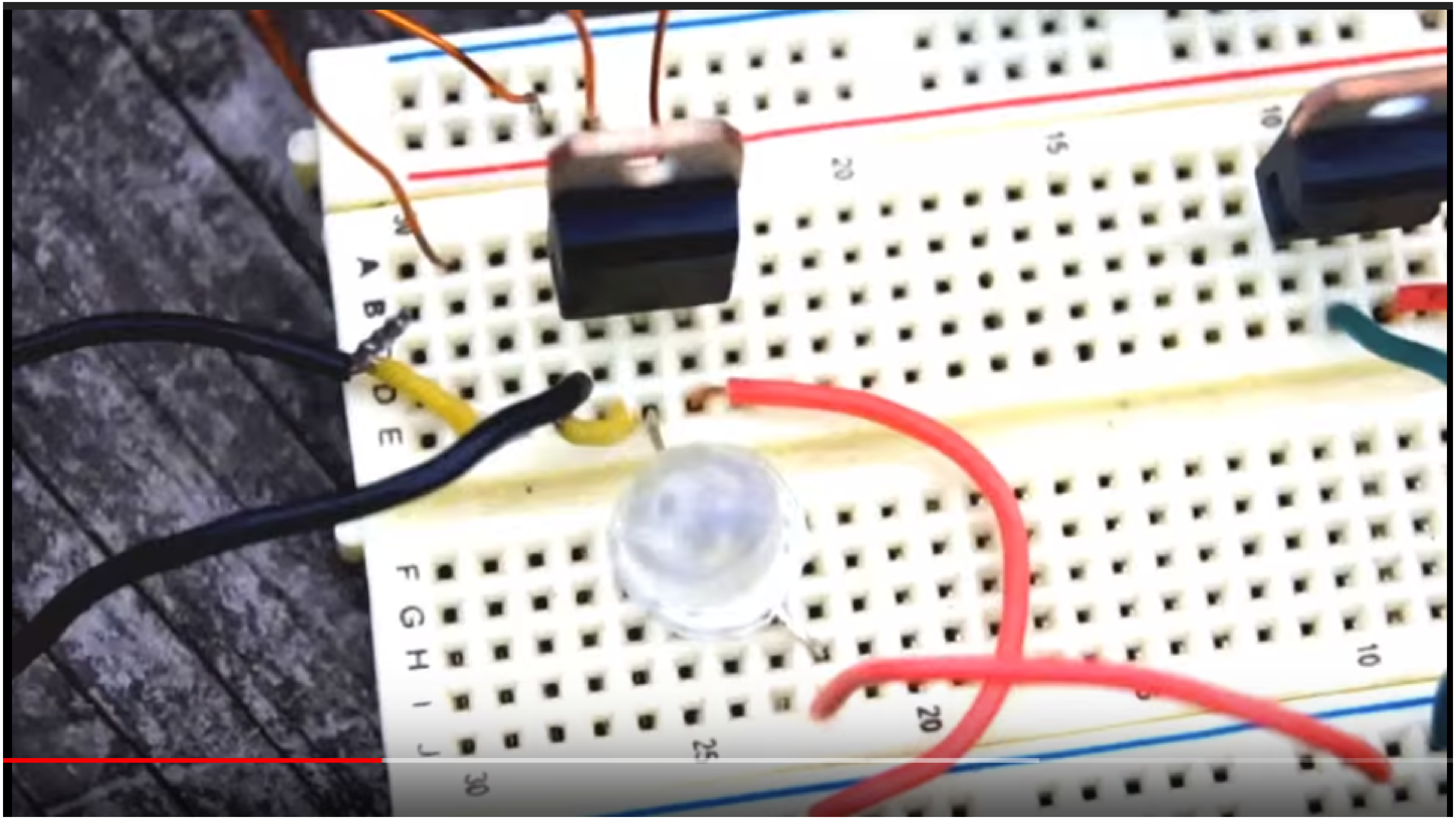


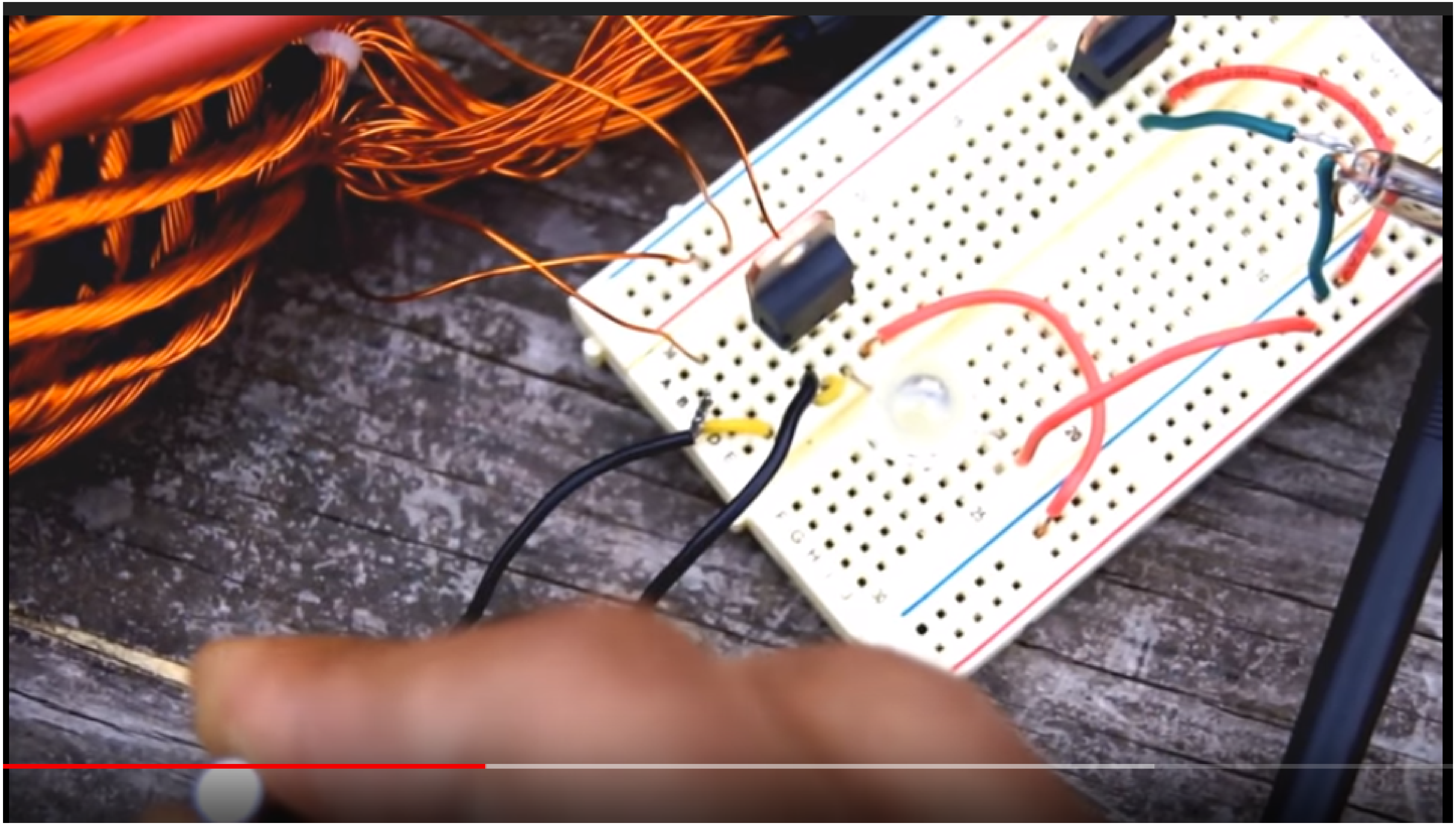


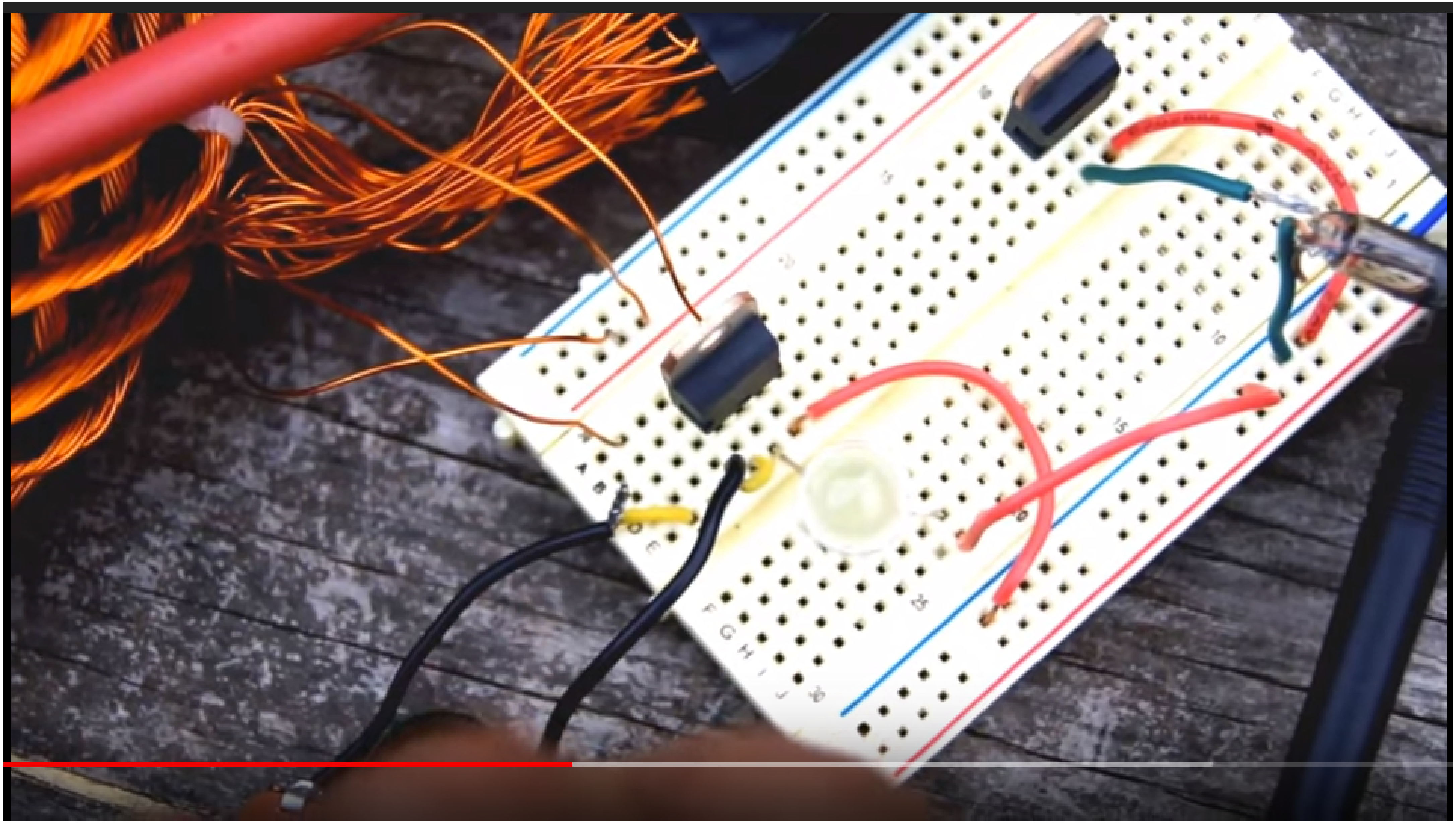


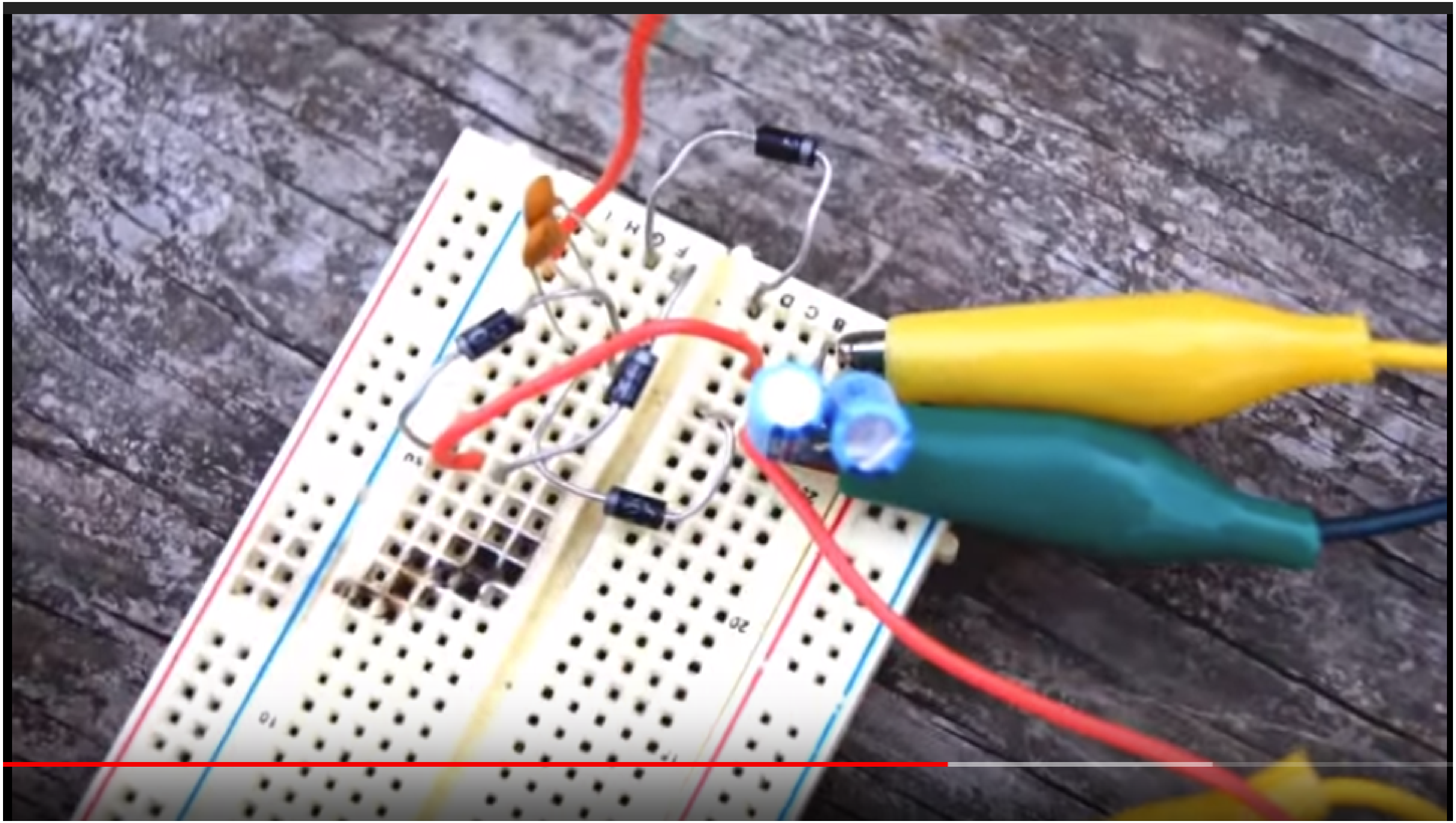
www.1StopEnergies.com
vortex 2
are wired
in reverse
direction.*
.099 mA
+
−
12v
100k Pot
MJE3055T

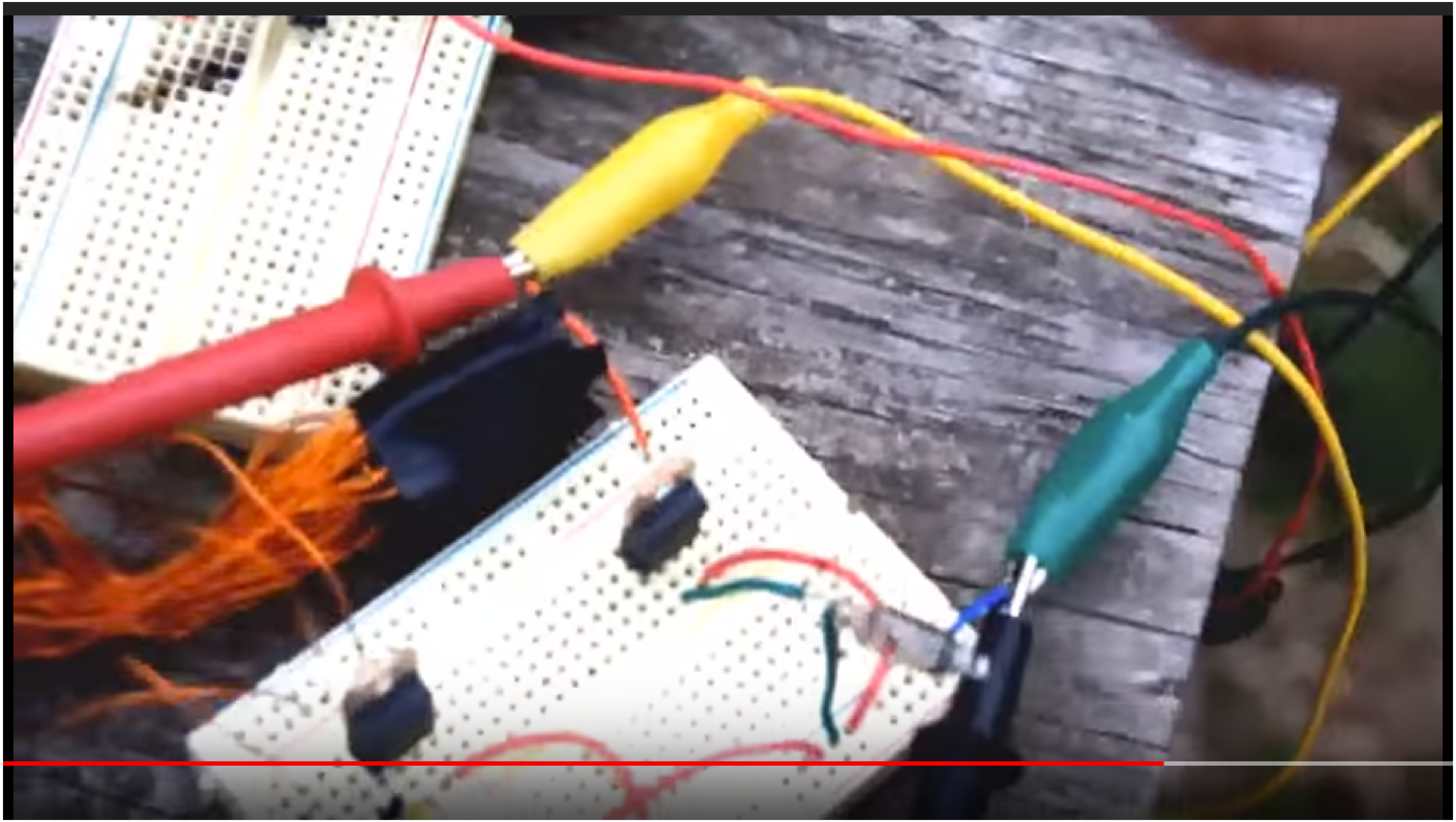

.099 mA
12v
MJE3055T
100k Pot
11 Ultra Bright LED's (800+ lumens)

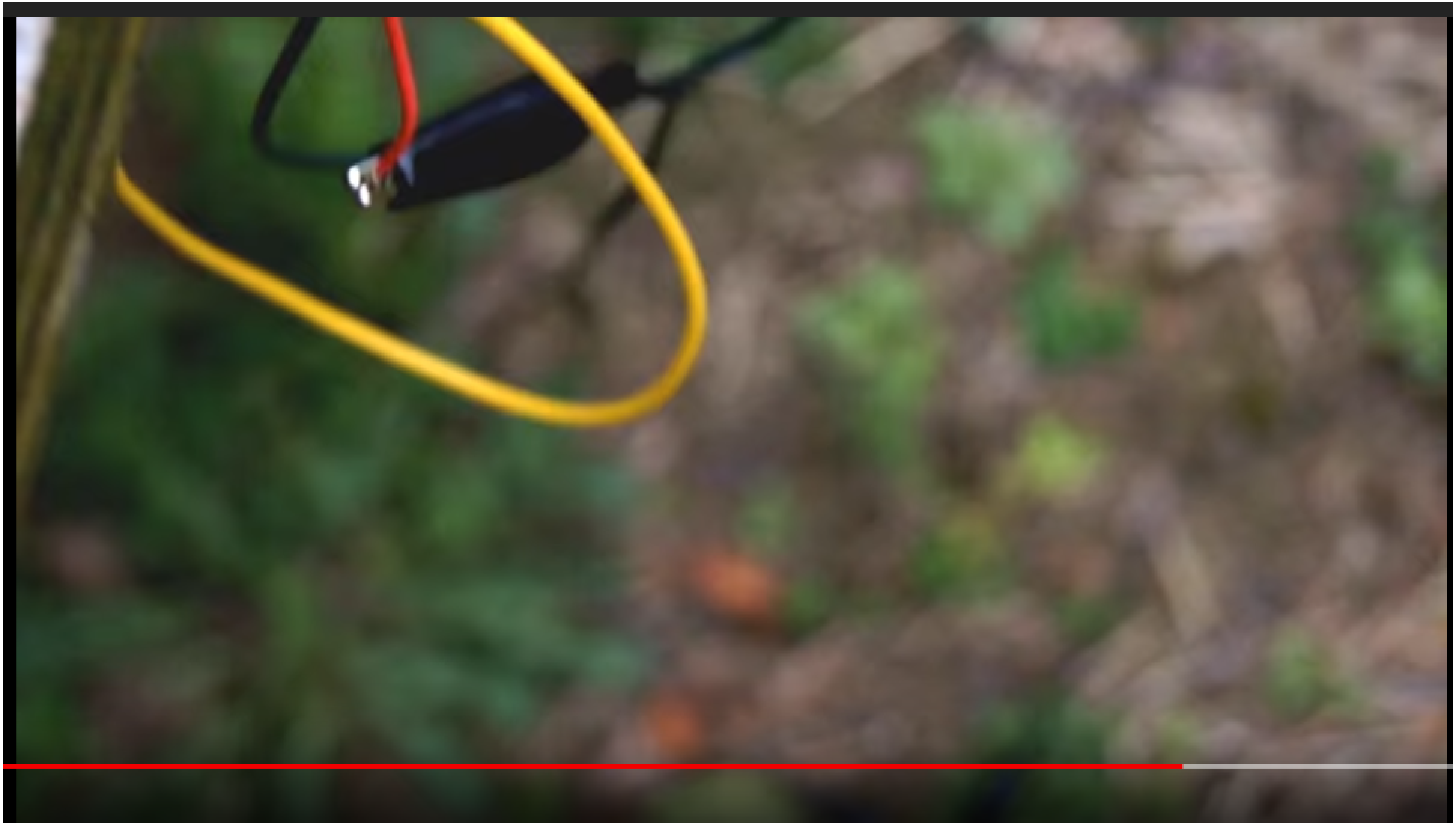


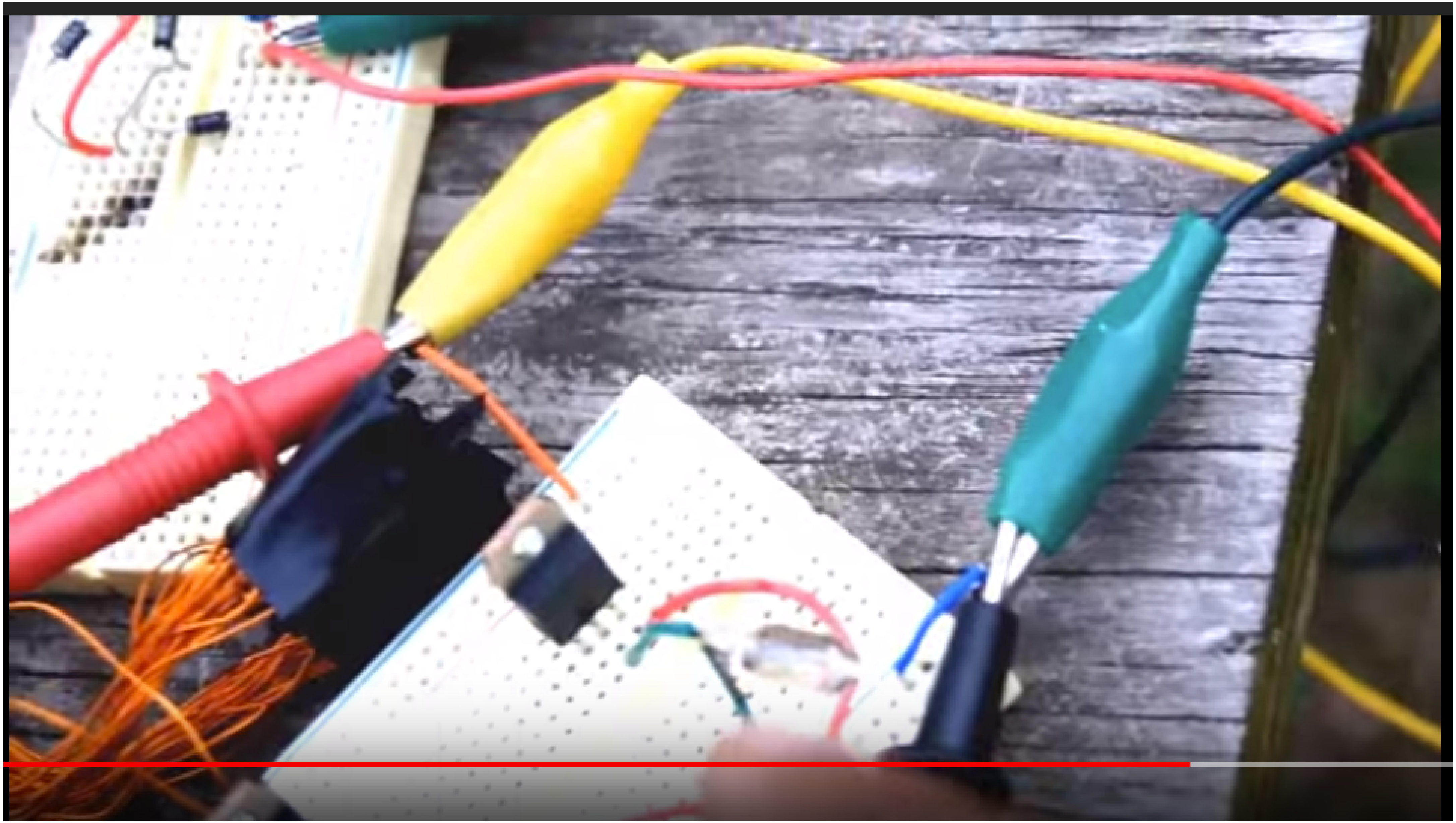




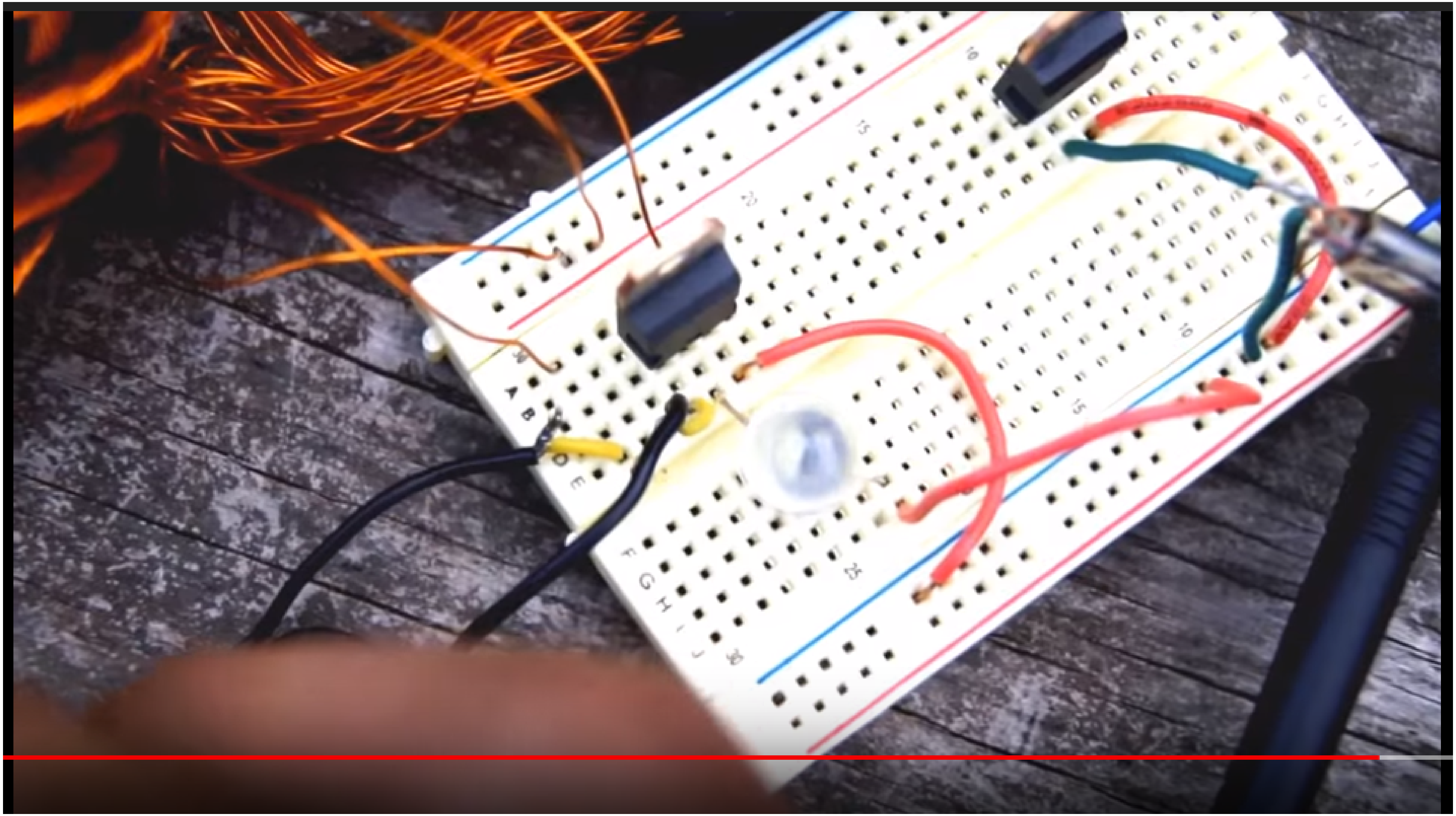


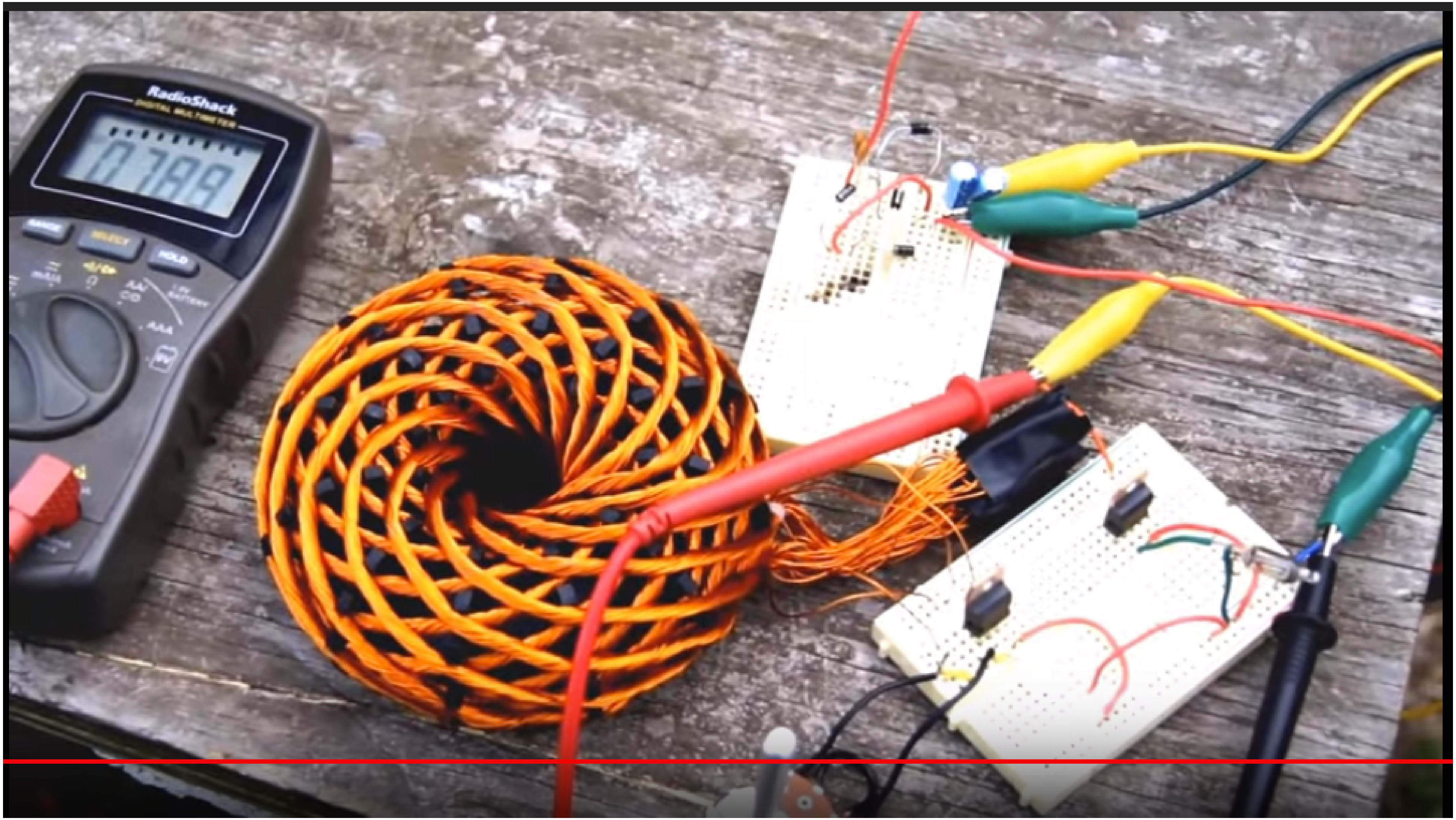


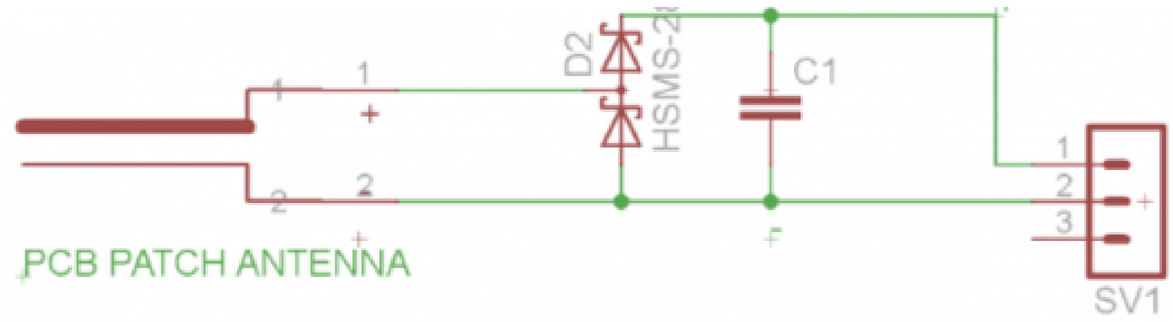





That is a 1/4" x 1' long




RadioShack



Arrays can be built by connecting in series like regular batteries large numbers of single-element harvesters. These have the advantage that they have a larger effective area and can harvest greater amounts of energy. Pictured bellow is such an array, near a single element harvester.

We tested the array around a regular wireless router and managed to harvest a few hundred microwatts of power from the ongoing wireless traffic. While this might not seem much, it was enough to light an LED diode. Given more time, we could have adapted this harvester to continuously trickle-charge a supercapacitor. That would have given us enough energy to power in bursts a wireless sensor node like the one we used for light intensity measurements.

Radio de galena

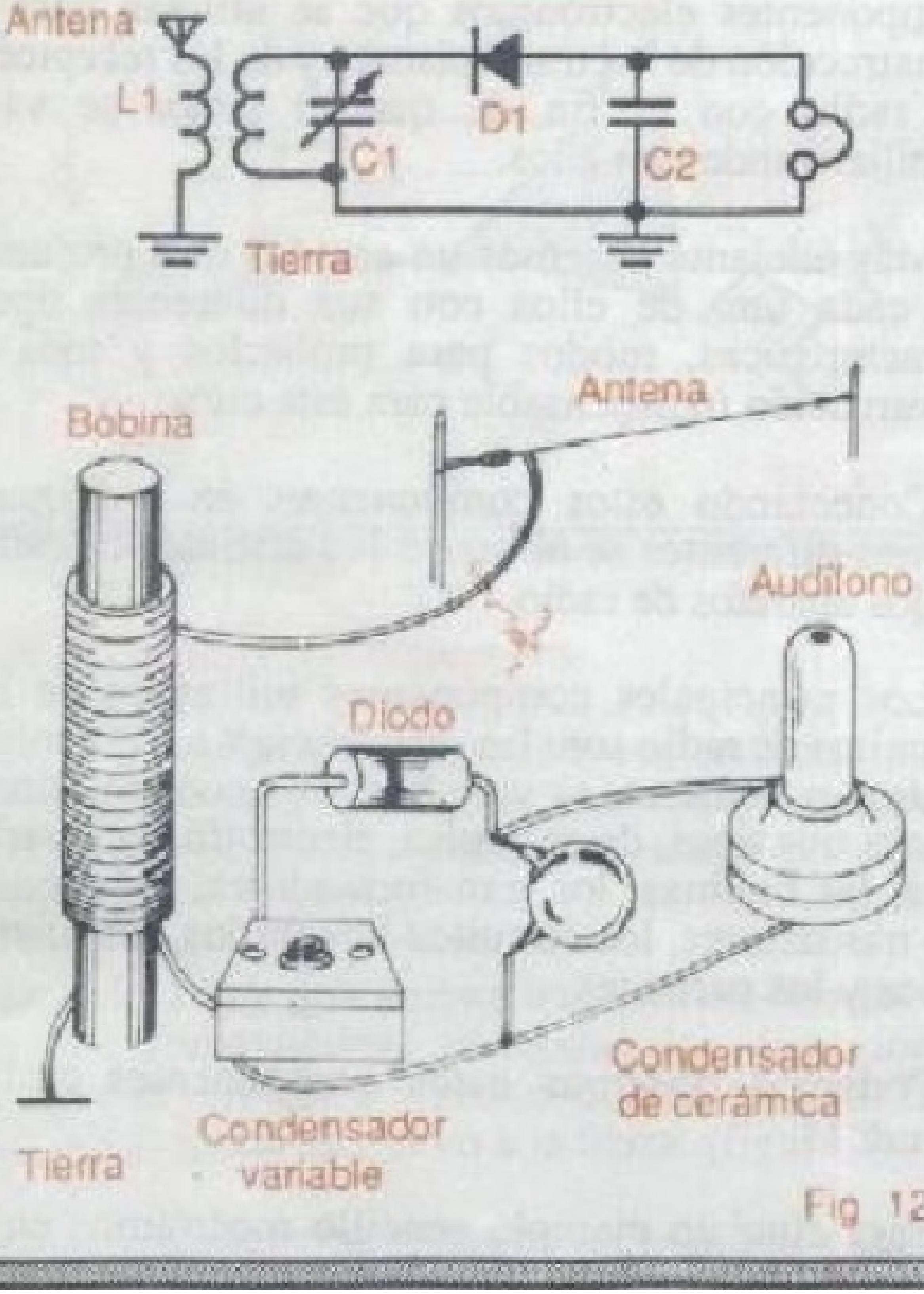
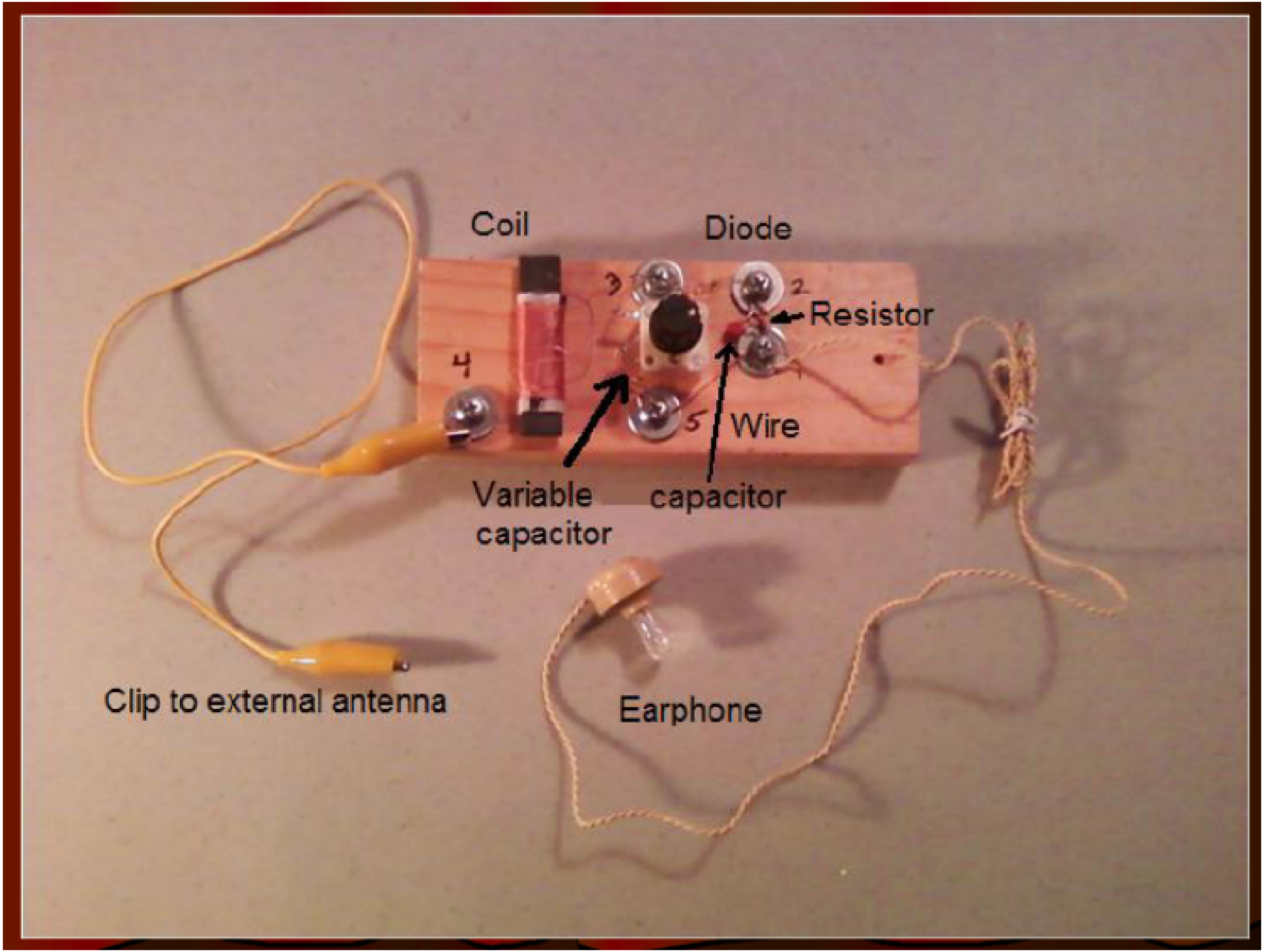
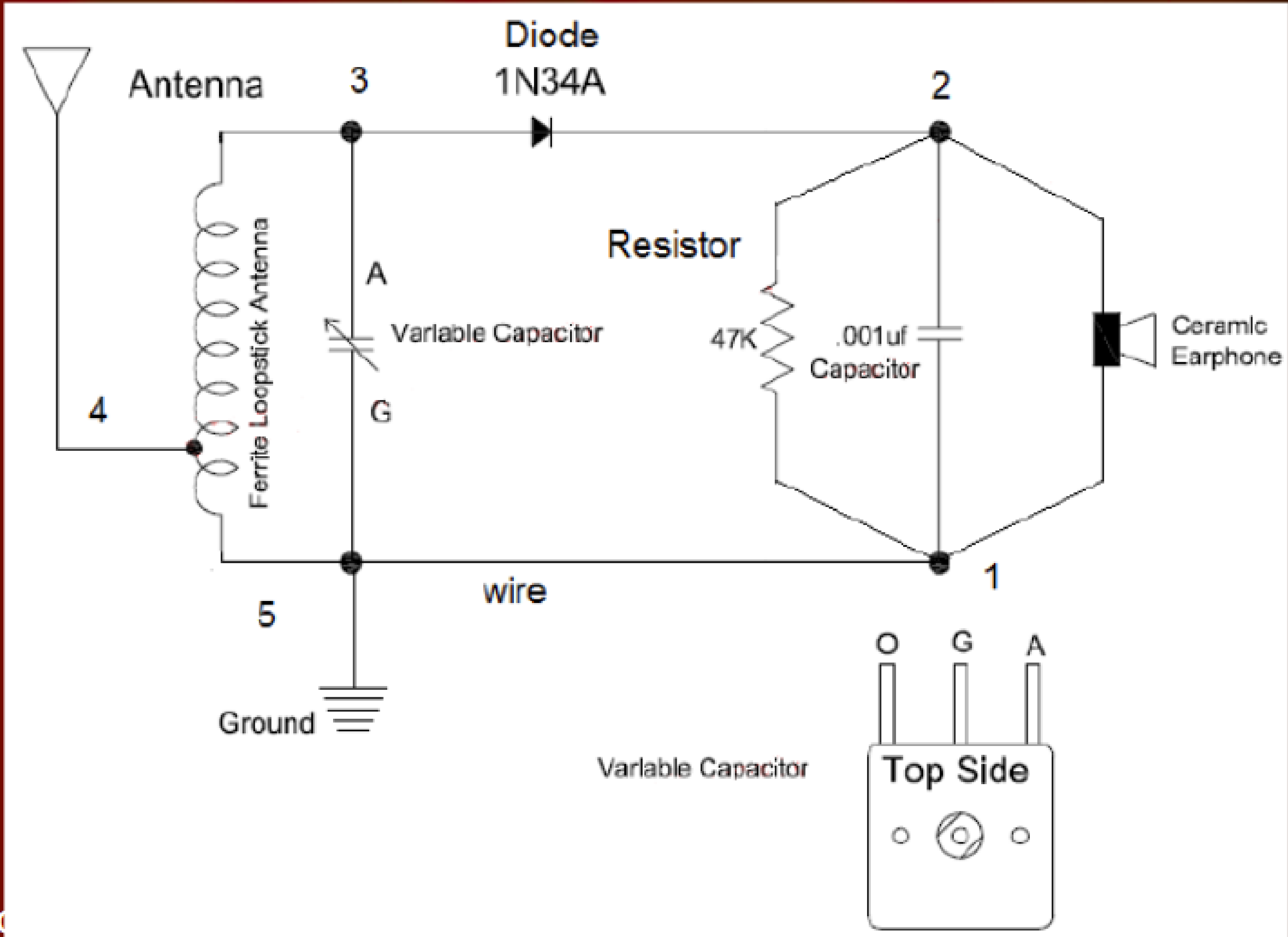
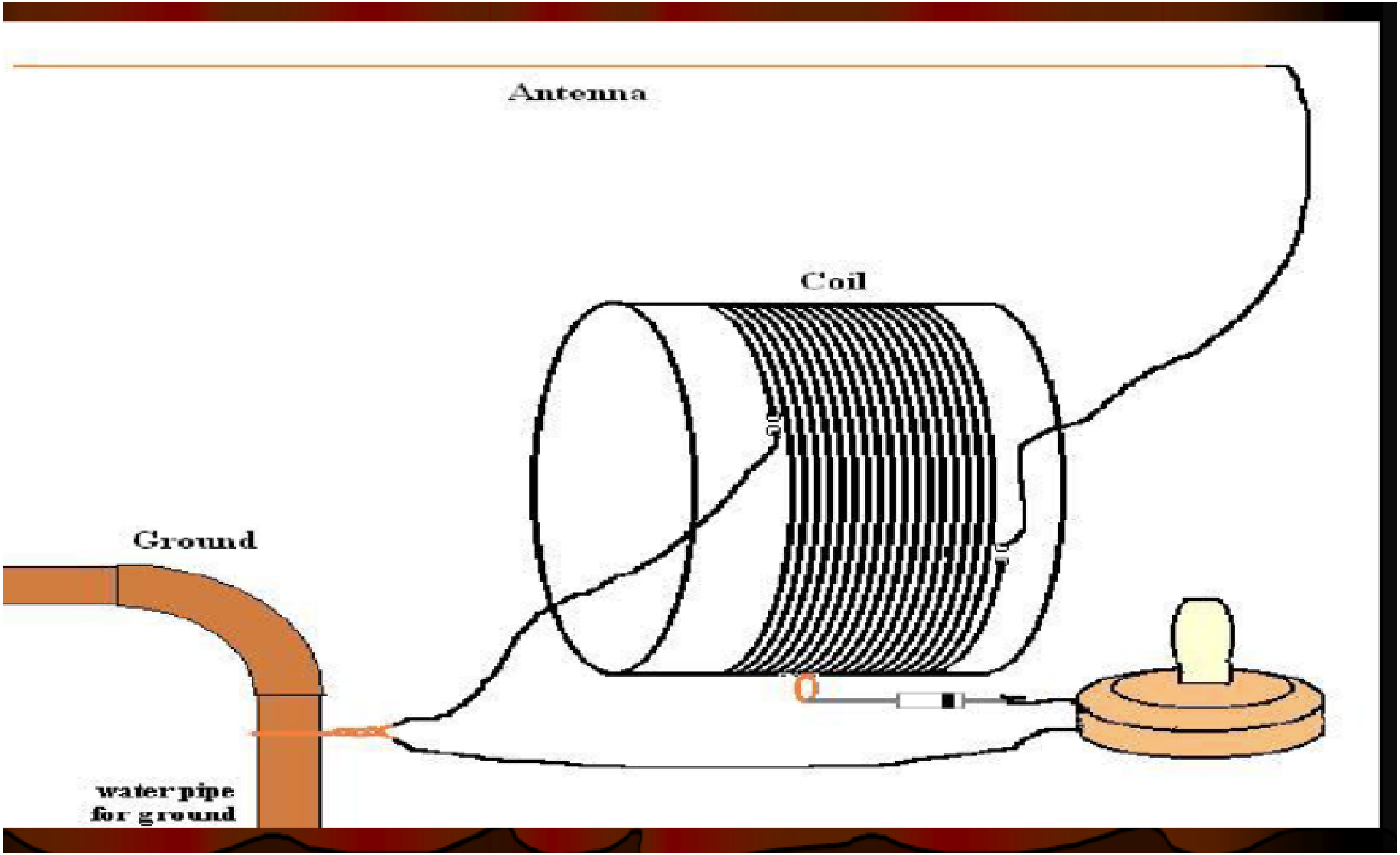


Fig 12

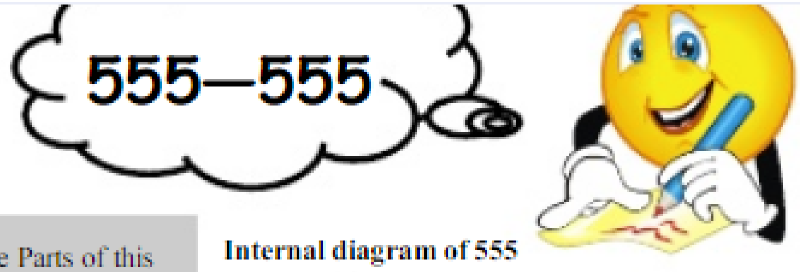

Coil
Diode
Resistor
Wire
Variable capacitor
capacitor
Clip to external antenna
Earphone



[S…
http://www.angelfire.com/electronic2/index1/DmCrystalSet.html]


Antenna
Coil
Ground
water pipe
for ground

7. 555 Timer Projects



In this section we will make :

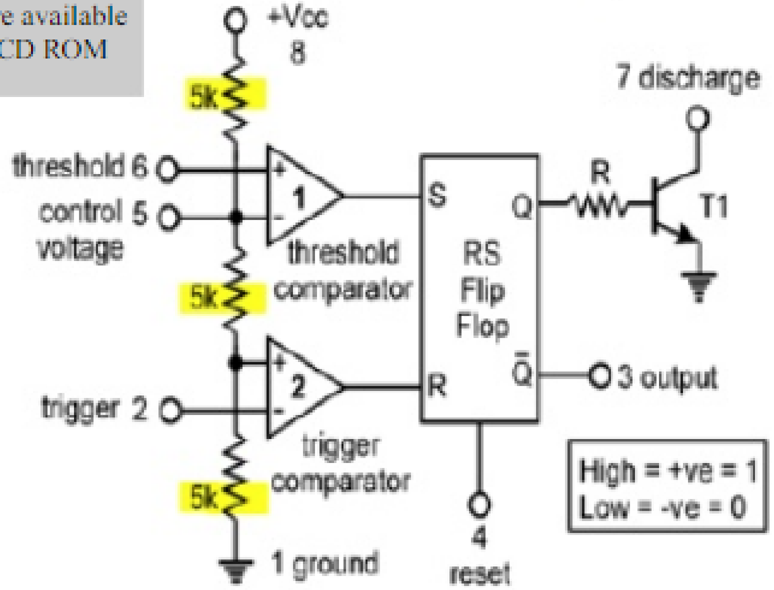
Some Parts of this project are available in Video CD ROM

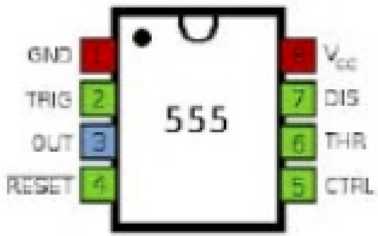
What is it about ?

555 timer integrated circuit (IC) is a very popular chip used in variety of applications like timer, pulse generation and oscillators. This is a low cost, stable and widely available chip which makes it favorite for hobby-ists. The internal components of 555 as shown in figure consists of 2 comparators and a flip flop. All of these components contain 25 transistors and 15 resistors packed in the IC.

The three highlighted 5k resistors shown in figure are the reason why this IC is named as 555.

Internal diagram of 555





Please note the notch near first pin. This is made to indentify the first pin of IC.

Pin	Name	Purpose
1	GND	Ground reference voltage, low level (0 V)
2	TRIG	The OUT pin goes high and a timing interval starts when this input falls below 1/2 of CTRL voltage (which is typically 1/3 of V_{CC}, when CTRL is open).
3	OUT	This output is driven to approximately 1.7V below $+V_{CC}$ or GND.
4	RESET	A timing interval may be reset by driving this input to GND, but the timing does not begin again until RESET rises above approximately 0.7 volts. Overrides TRIG which overrides THR.
5	CTRL	Provides "control" access to the internal voltage divider (by default, 2/3 V_{CC}).
6	THR	The timing (OUT high) interval ends when the voltage at THR is greater than that at CTRL.
7	DIS	Open collector output which may discharge a capacitor between intervals. In phase with output.
8	V_{cc}	Positive supply voltage, which is usually between 3 and 15 V depending on the variation.

Assuming there is a constant -37dBm power flow entering the energy harvesting antenna. It will take 11.7 days for the RF harvester to collect 0.32 Joules of energy. This does not take into account the reflection which may occur between the antenna and the input of the RF harvester,

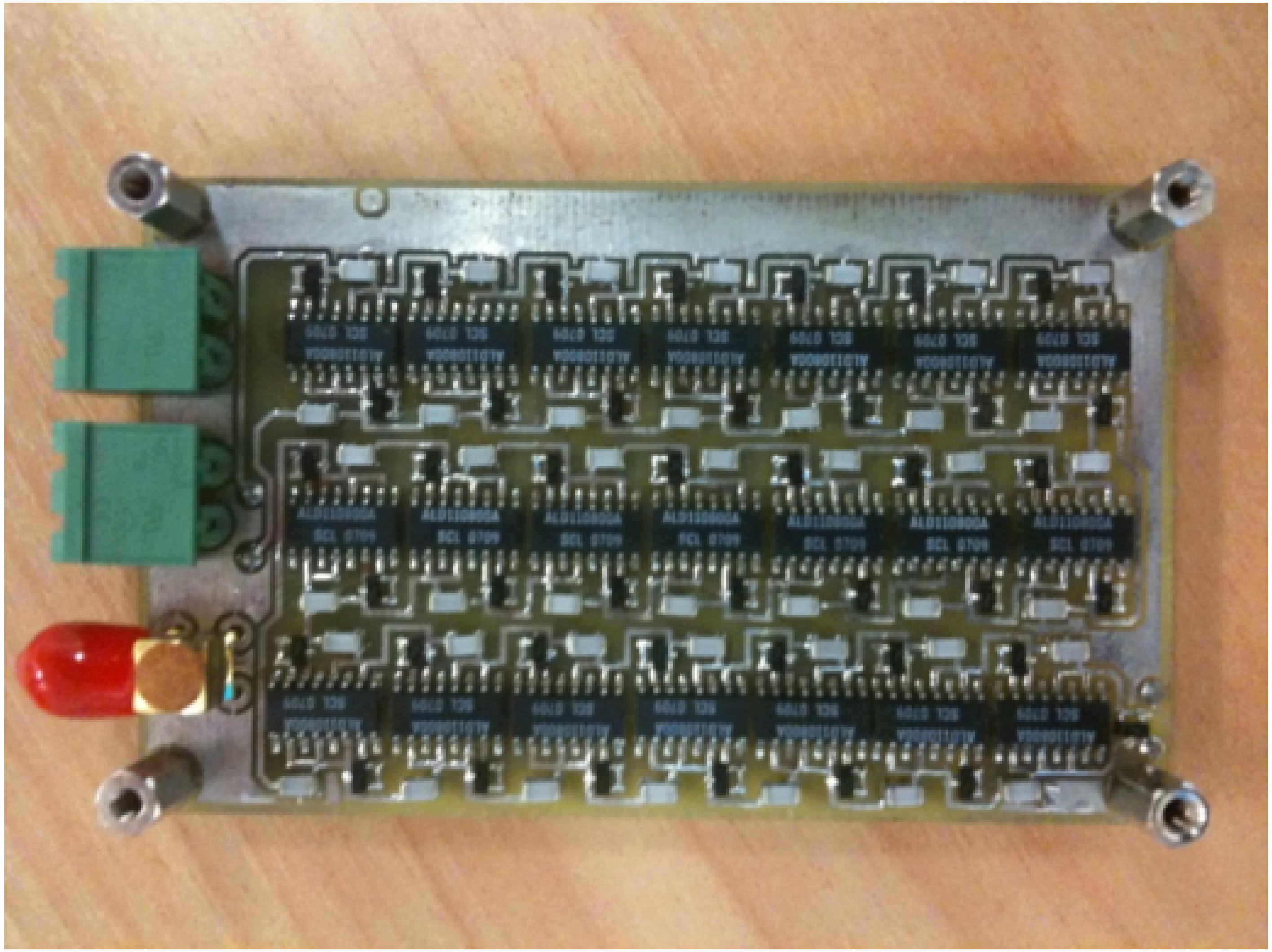


Figure 6: Power harvesting system (top layer)

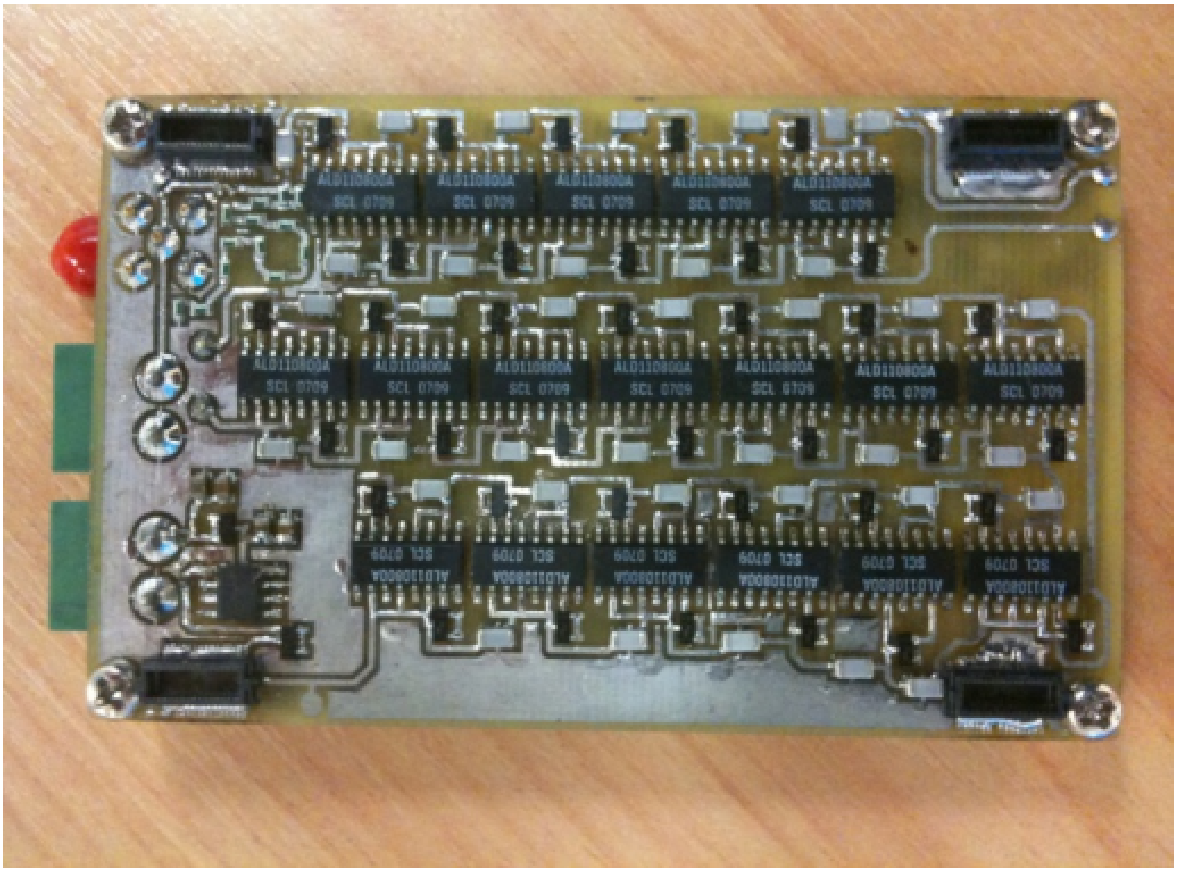


Figure 7: Power harvesting system (bottom layer)

The realistic time the RF energy harvesting circuit will take to collect enough energy for one data transmission will be closer to 20 to 30 days. This is taking into account the reflection coefficient and the fluctuations in power levels. There are still many applications where such a device will be very useful. One such application is in silver-culture. Here circumferential sensors are used to measure the growth of trees. Since the trees grow very slowly the time between measurements is usually a month or more. By powering these sensors from an ambient source, it eliminates the need to ever change the batteries. For applications requiring faster charge rates, it is possible to combine

Share

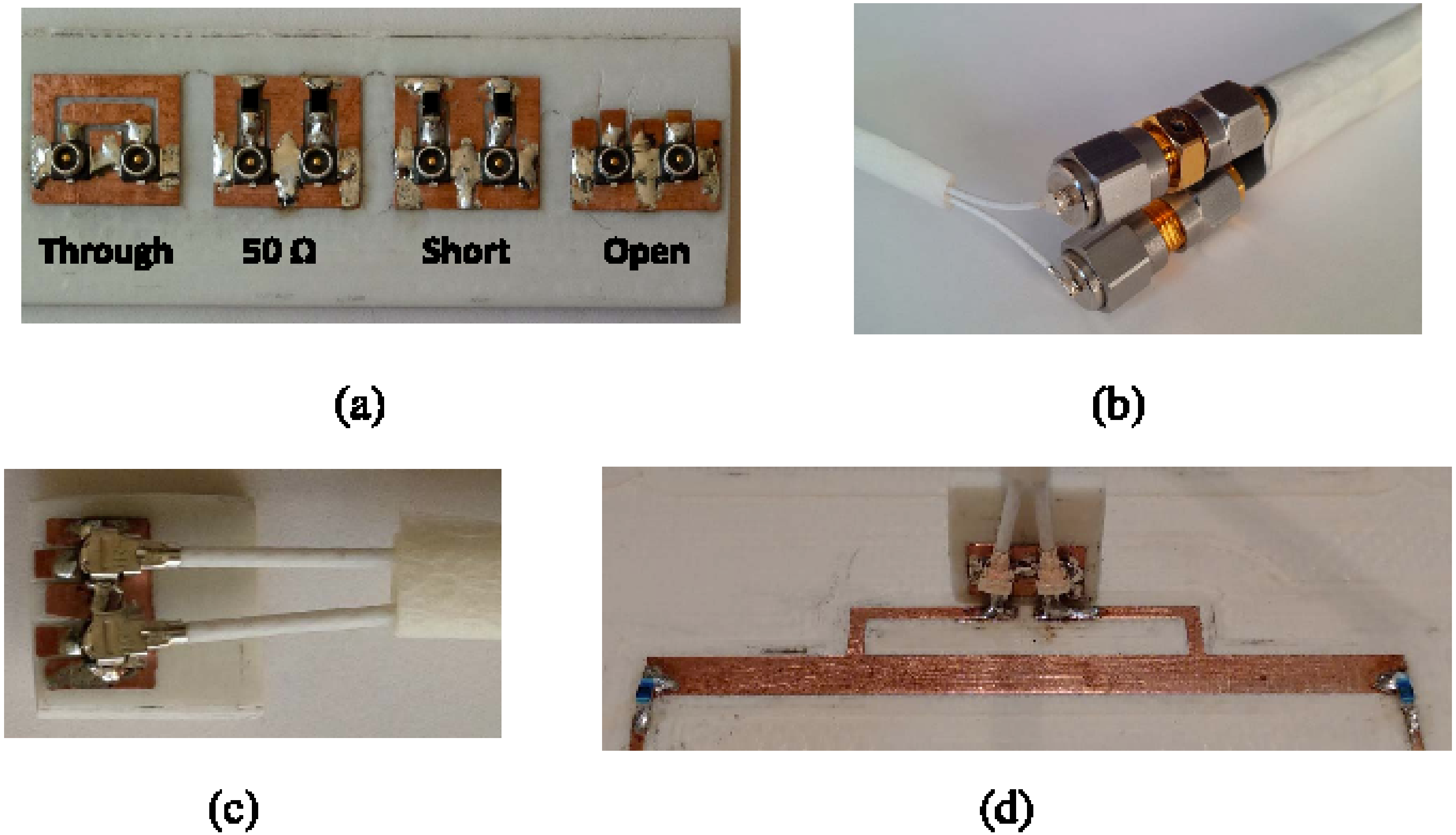
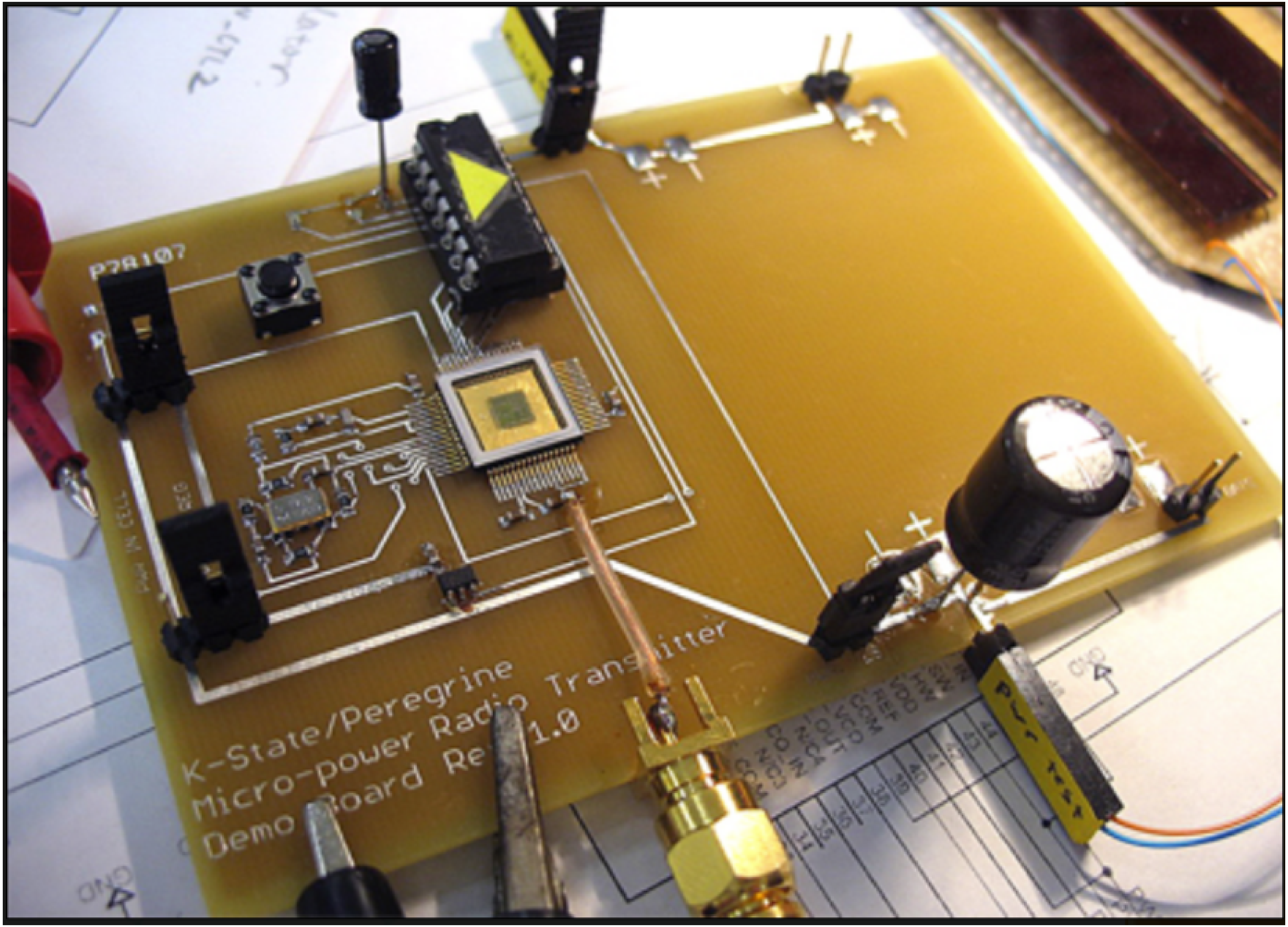


Fig 5 Differential input impedance measurement setup (a) Custom

Fig. 5. Differential input impedance measurement setup. (a) Custom calibration kit. (b) W.FL to SMA adaptor. (c) Calibrated reference plane of the logical differential port. (d) Input impedance measurement of the T-match dipole antenna.


P28107
K-State/Peregrine
Micro-power Radio Transmitter
Demo Board Rev 1.0

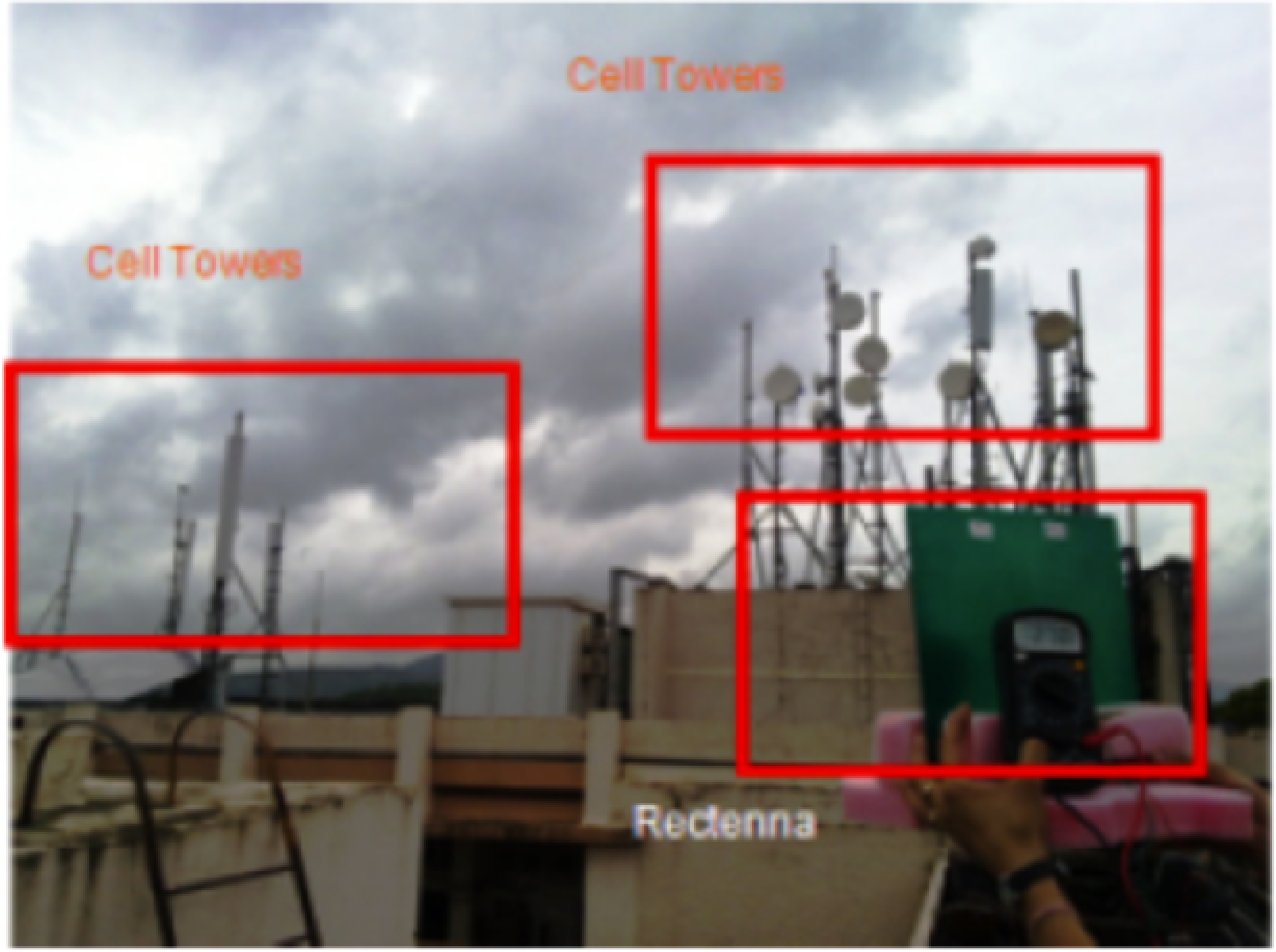
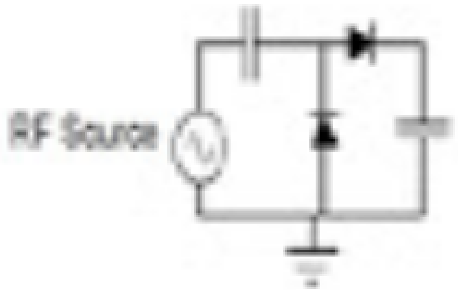
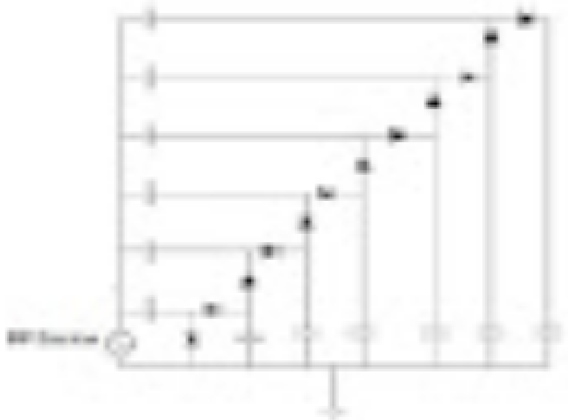


Fig. 12. Experimental setup for Rectenna measurement at 10m from cell tower (IIT-B)

Fig. 5. Measured (a) VSWR and (b) Input impedance of Electromagnetically Coupled SMSA

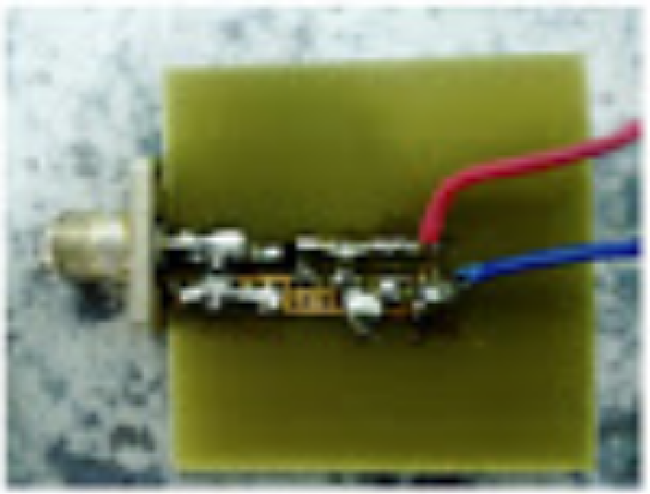


(a) Single stage voltage doubler

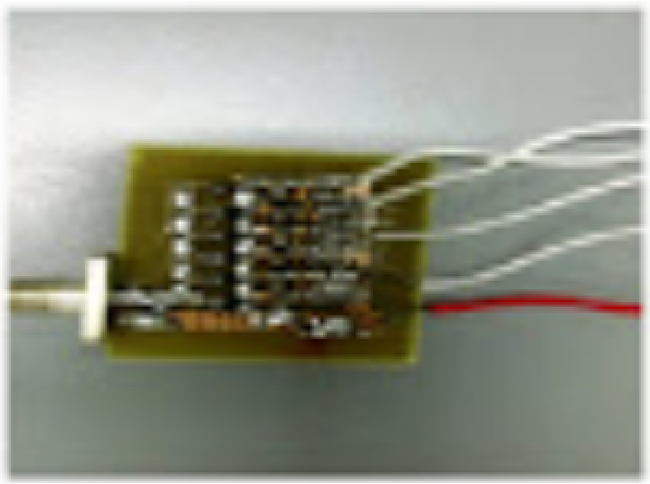


(b) 6-stage voltage doubler

Fig. 6. (a)Single stage voltage doubler and (b) 6-stage voltage doubler



(a) Fabricated Single stage voltage doubler



(b) Fabricated 6-stage voltage doubler

As you can see in figures 3 and 4, there is not much to this 120V$_{AC}$ to 12V$_{DC}$ adaptor.

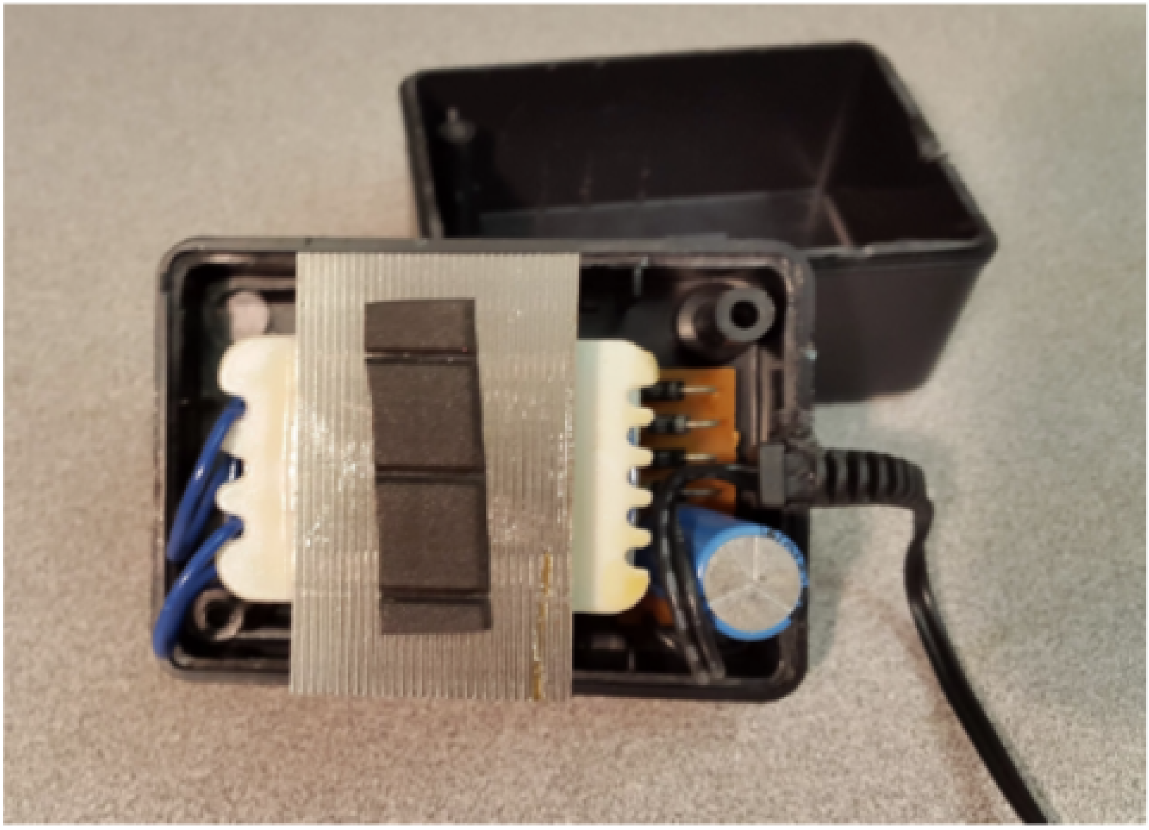


Figure 3. Top View of the Inside of the AC Adaptor

Figure 4. AC Adaptor Components Spread Out

Transformer

Figure 5 shows the same adaptor seen from the side. The blue wires on the right are the inputs from the two-prong wall connection and they connect directly to the primary of the transformer. The output from the secondary can be seen at the lower left of the transformer as two small copper wires. The purpose of the transformer is to step the AC voltage down from the $120V_{RMS}$ from the wall outlet to a voltage that is closer to the required DC voltage.

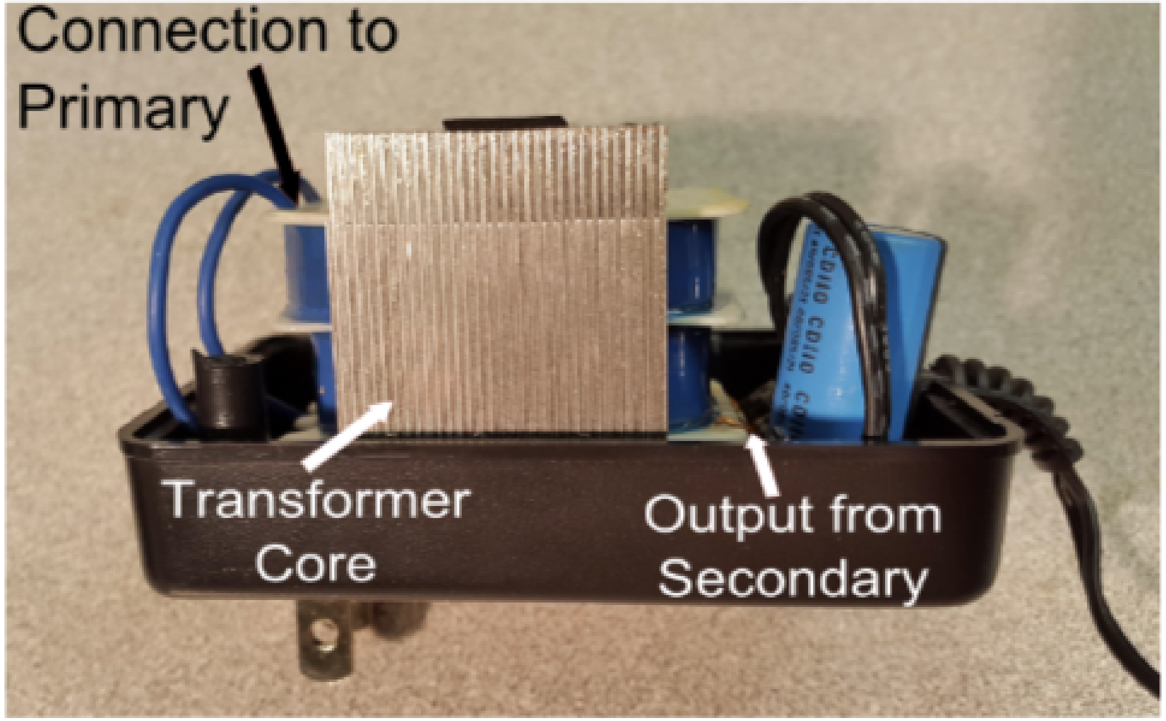


Figure 5. Side View of AC Adaptor with Transformer Labeled

If you ignore all of the non-ideal properties of transformers, they are very simple devices. The general idea is that there are two (usually large) coils of wire that are electrically isolated, but magnetically coupled together. The input side of the transformer is called the primary and the output side is called the secondary. Alternating current passes through the primary coil which creates an alternating magnetic flux in the transformer core. This alternating magnetic flux in turn induces a voltage in the coils of the secondary. The ratio of the number of loops in the primary coil to the number of loops in the secondary coil is equal to the ratio of the input AC voltage to the output AC voltage. In equation form this relationship is:

The Bridge Rectifier

The next stage in the wall adapter is the bridge rectifier. This device takes the AC output of the transformer and converts it into a DC voltage. It does this using an arrangement of diodes that force the current to pass through the load in one direction only. Figure 8 shows the diodes in the adaptor along with a schematic representation of how the diodes are connected together.

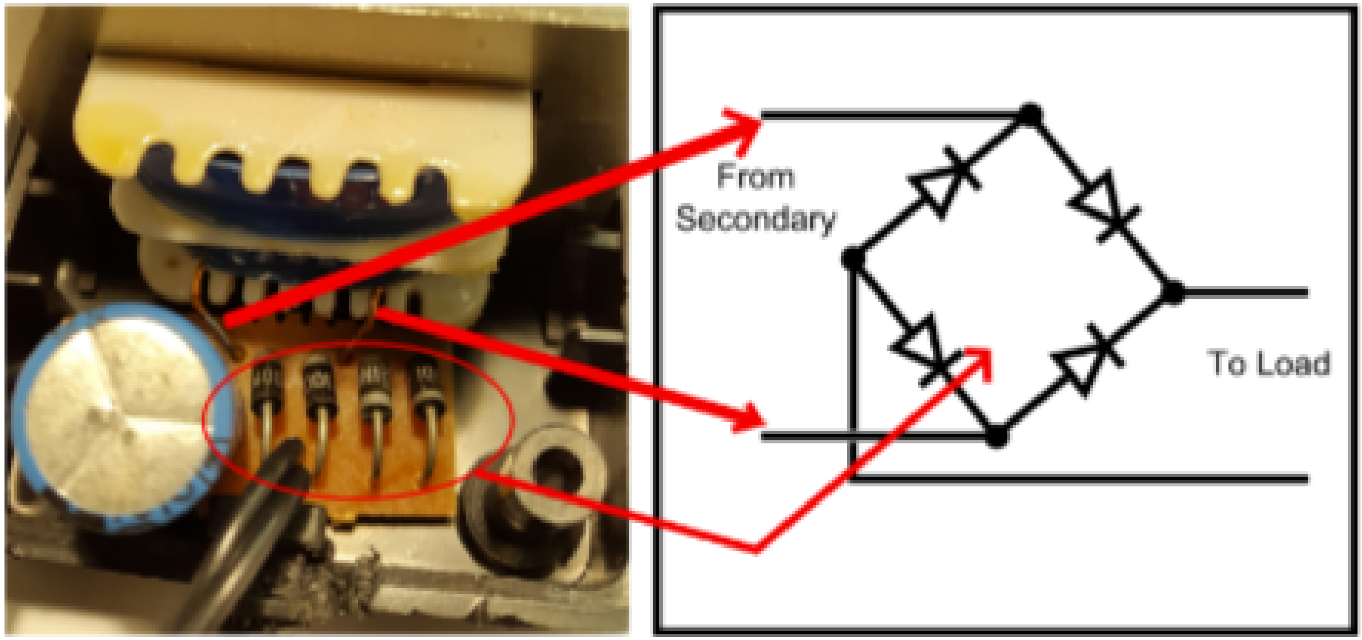


Figure 8. Full Bridge Rectifier Circuit and Schematic

The bridge rectifier in this wall adapter is made of four individual diodes (part number 1N4001), but sometimes the rectifier is a basic integrated circuit with the four diodes manufactured all in one device like in figure 9.

figure 9.

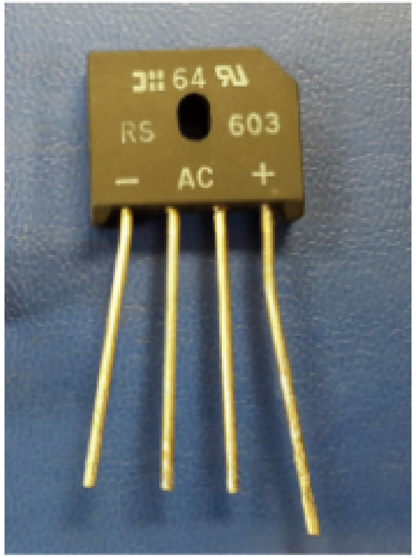


Figure 9. Bridge Rectifier in an IC

The output of the rectifier is only DC in the sense that current to the load is forced in one direction. The voltage is still varying a large amount as can be seen in figure 10. Effectively what the rectifier did was to take the negative portion of the voltage and flip it around to make it positive as shown in the figure below. The voltage still swings between 0V and the peak. Further processing must be done on the voltage to minimize the voltage swing and that is what the next stage does.

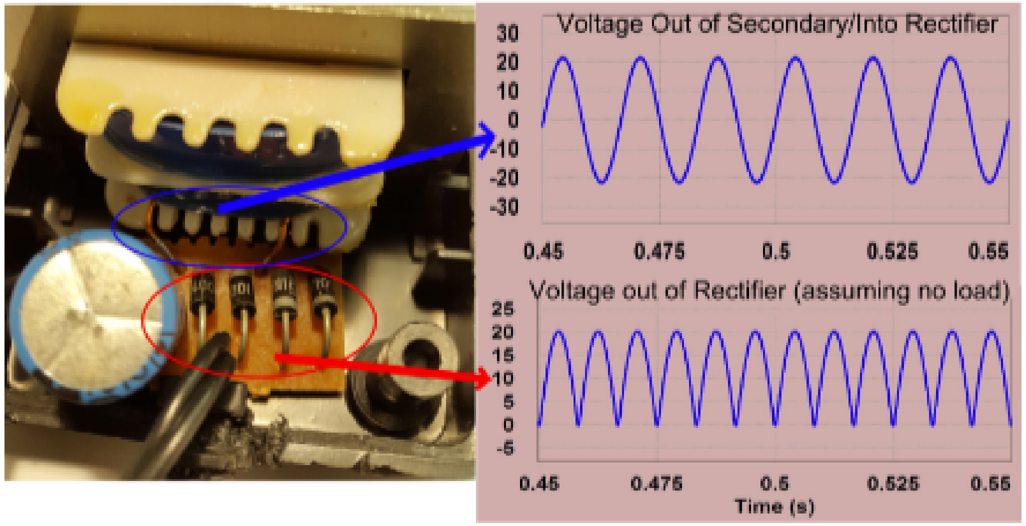


Figure 10. Rectifier Circuit Showing Input and Output Voltages.png

The Capacitor

The next problem to solve is how to take that varying voltage and smooth it out so that the load receives a more or less constant voltage. The main component in this fight against this ripple is the capacitor. The capacitor is the tall blue cylindrical component in figure 11 below:

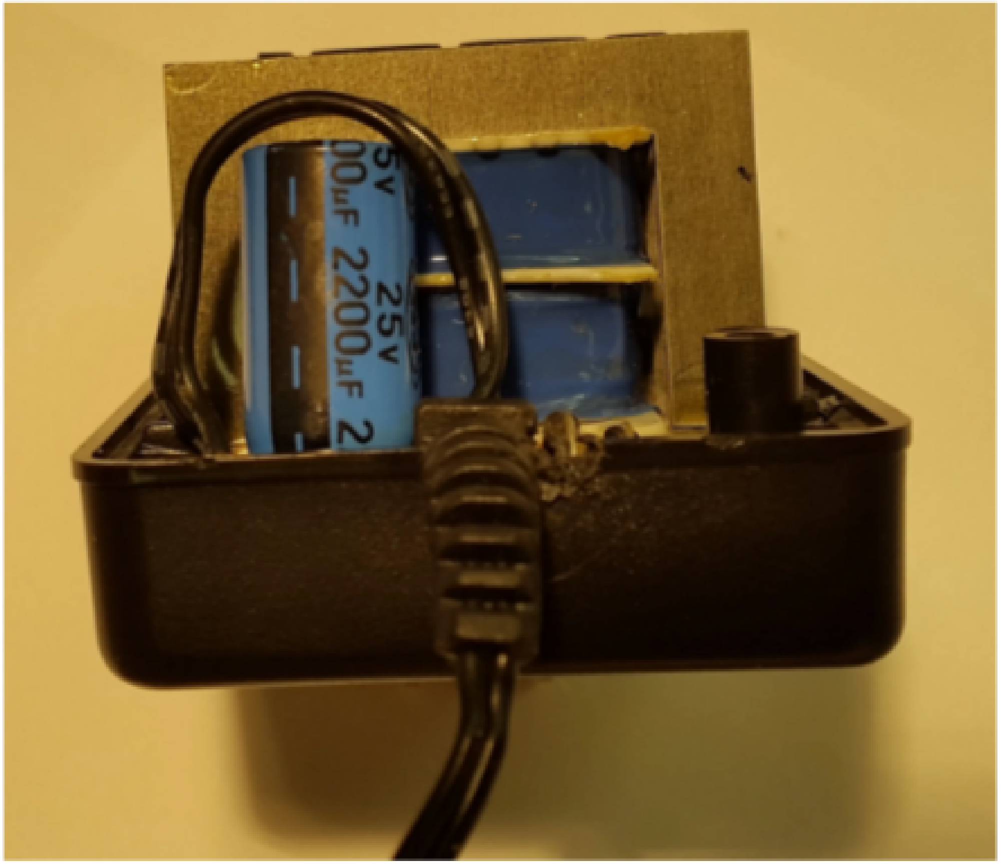


Figure 11. Capacitor in AC Adaptor

The capacitor in this wall adapter is a 2200 uF electrolytic capacitor. Electrolytic capacitors are typically used because it is possible to have a relatively high capacitance (100s or even 1000s of uF) and reasonable voltage tolerance (10's of volts) at an affordable price. For example, a quick search on an electronic component supplier's website shows me that a 2200 uF capacitor that can tolerate up to 50V is under $3 if it is an electrolytic capacitor and more than $250 if it is a film capacitor. The primary downside of electrolytic capacitors is that they have a much shorter life expectancy than film capacitors. In fact electrolytic capacitors are likely to be the component that fails first in any electronic system. Generally manufacturers

Full Circuit Recap

The preceding sections of this article show that the transformer, the rectifier and the capacitor are all that are required for a basic AC-DC converter. This final picture and schematic shows the end to end voltage processing done by the converter as it converts AC voltage into DC voltage.

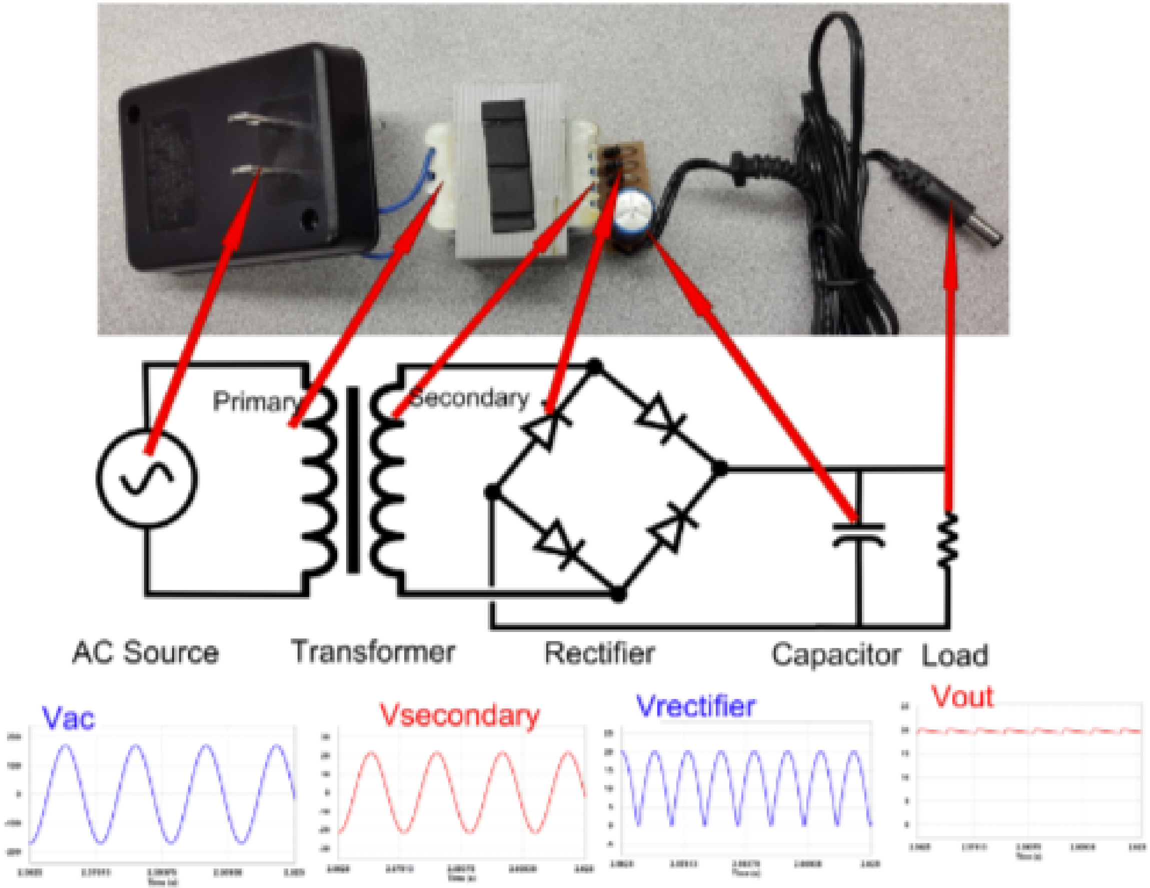
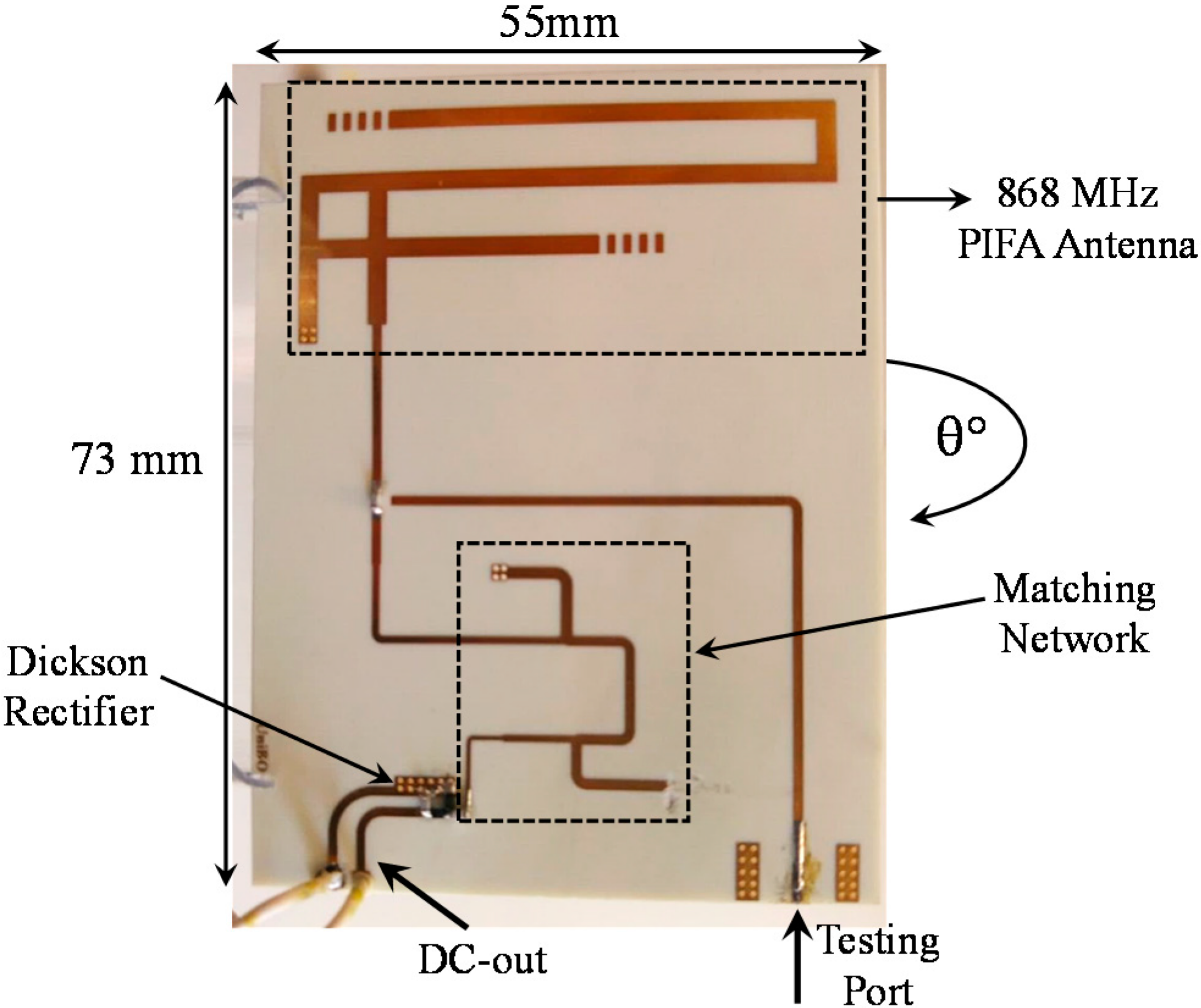
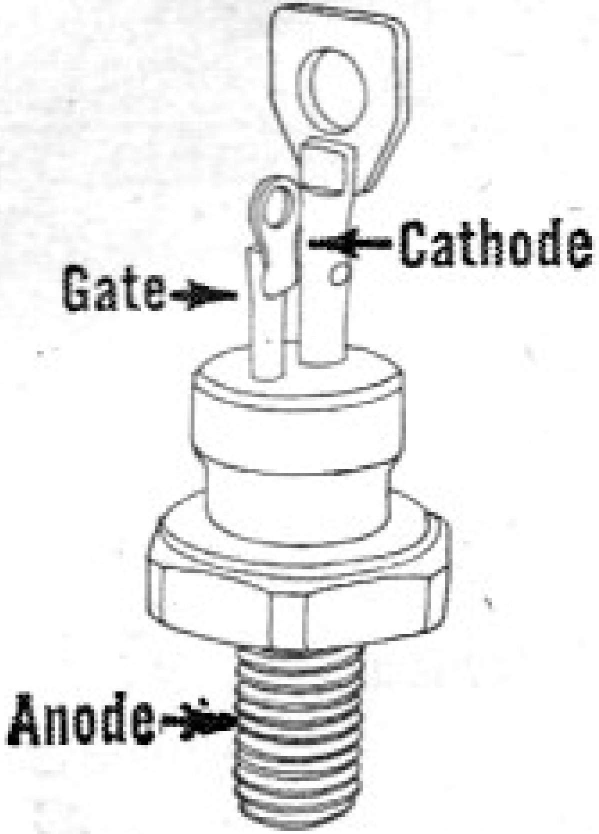
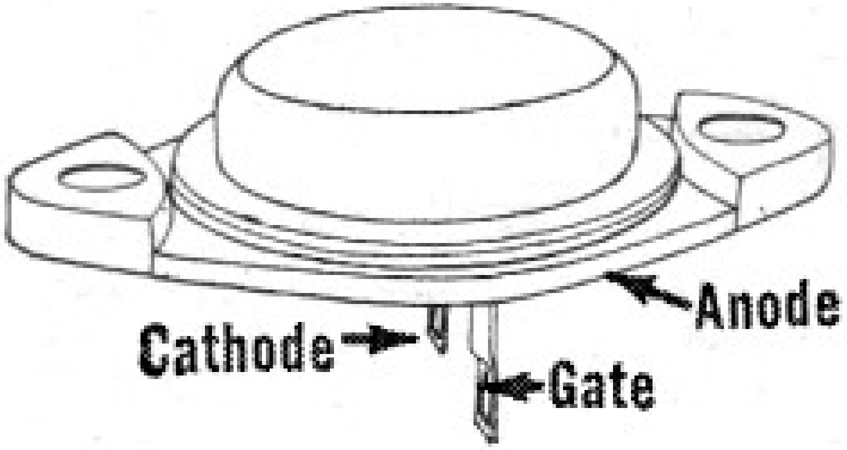
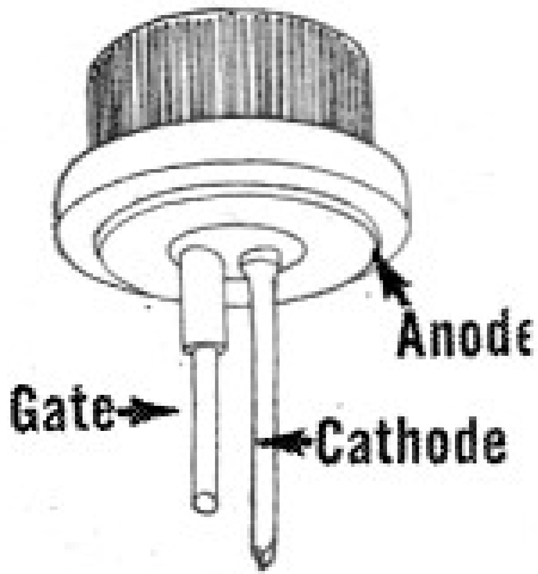


Figure 14. AC Adaptor, Schematic and Voltages

From this picture it looks like we get a reasonably steady DC output voltage given a $120V_{RMS}$ AC input voltage (note that the output is unregulated, so with no load, the DC voltage is actually higher than the rated 12V). For this 20 watt AC-DC converter, as long as the voltage ripple is meeting your specifications, there is not much more that you need to worry about. However, as mentioned earlier, there can be problems at higher powers due to the large in-rush current to the capacitor as it is recharged. These problems will be analyzed in part 2 of the rectifier investigation.



55mm
868 MHz
PIFA Antenna
73 mm
θ°
Matching
Network
Dickson
Rectifier
DC-out
Testing
Port

STUD PACKAGE	DIAMOND PACKAGE	PRESS-FIT PACKAGE
		

Maximum Forward Anode Current Rating

25 amps. r.m.s.	20, 25 amps. r.m.s.	18 amps. r.m.s.

Maximum Peak Forward Anode Voltage Rating

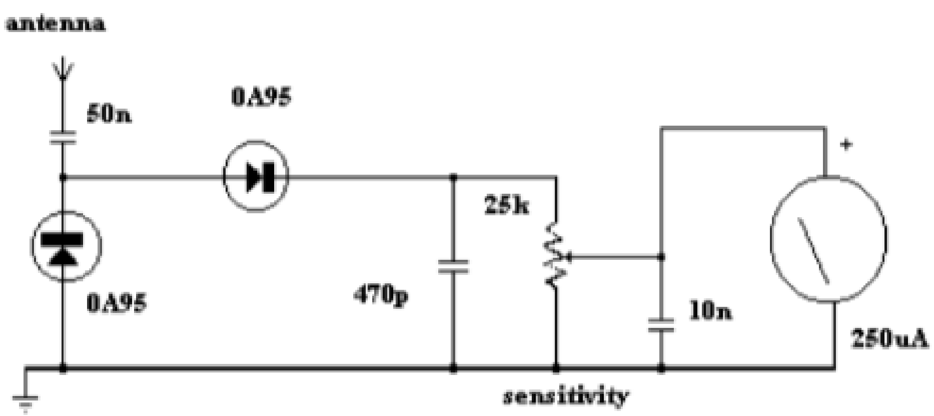
600 v.	600 v.	600 v.

Maximum Peak Reverse Anode Voltage Rating

20, 50, 100, 150, 200, 250, 300, 400, 500 v.	25, 50, 100, 200, 300, 400, 500 v.	25, 50, 100, 200, 300, 400 v.

Figure One below shows a schematic of an RF field strength meter. Like a crystal set, it requires no power source. However, unlike a crystal set, the meter has no tuned circuit. It responds to signals of any frequency.

Field Strength Meter



Field strength meter for FM transmitters

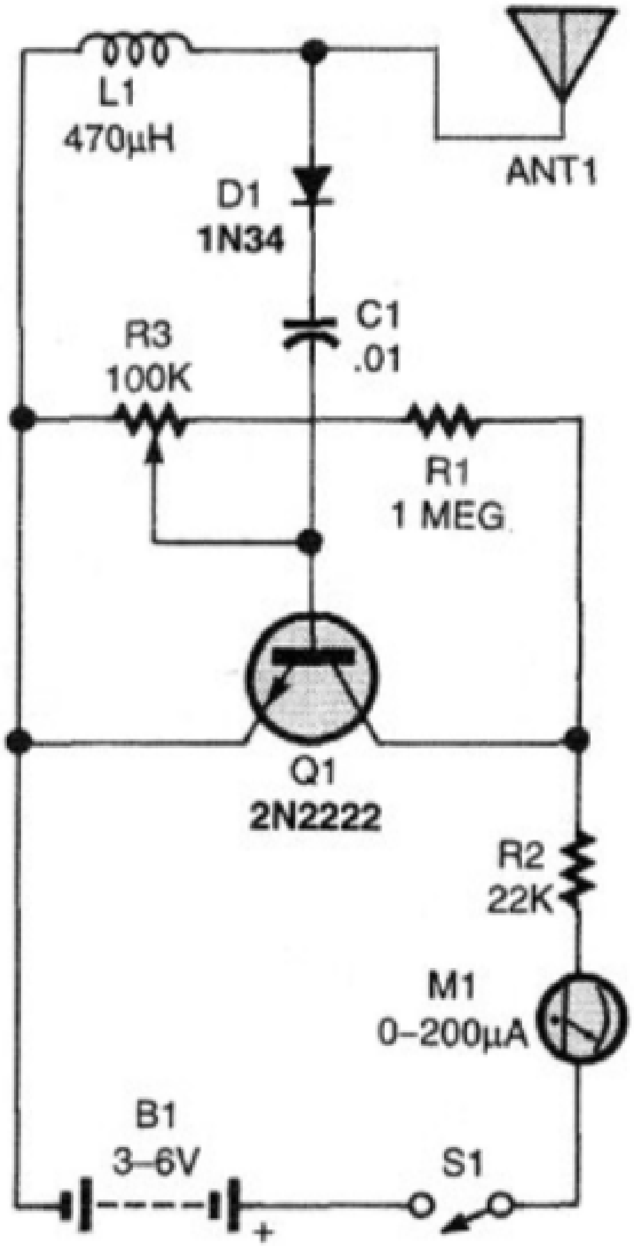
It's old, it's crude and it's way too simple, it might not be sensitive enough and it might not work.

Still, it's cheap and quick and just might help with tuning an antenna.

Submitted for your review with no assurances!

It should probably be built in an RF resistant enclosure and the adjustment is strictly relative.

It should probably not be used in any arguments with the FCC.



Field-Strength Meter a useful circuit that can be used to indicate the strength of the signals output by any transmitter

PARTS LIST

SEMICONDUCTORS

Q1—2N2222 general-purpose NPN silicon transistor
D1—1N34 or 1N60 or similar germanium diode

RESISTORS

(All fixed resistors are ¼-watt, 5% units.)
R1—1-megohm
R2—22,000-ohm
R3—100,000-ohm, trimmer potentiometer

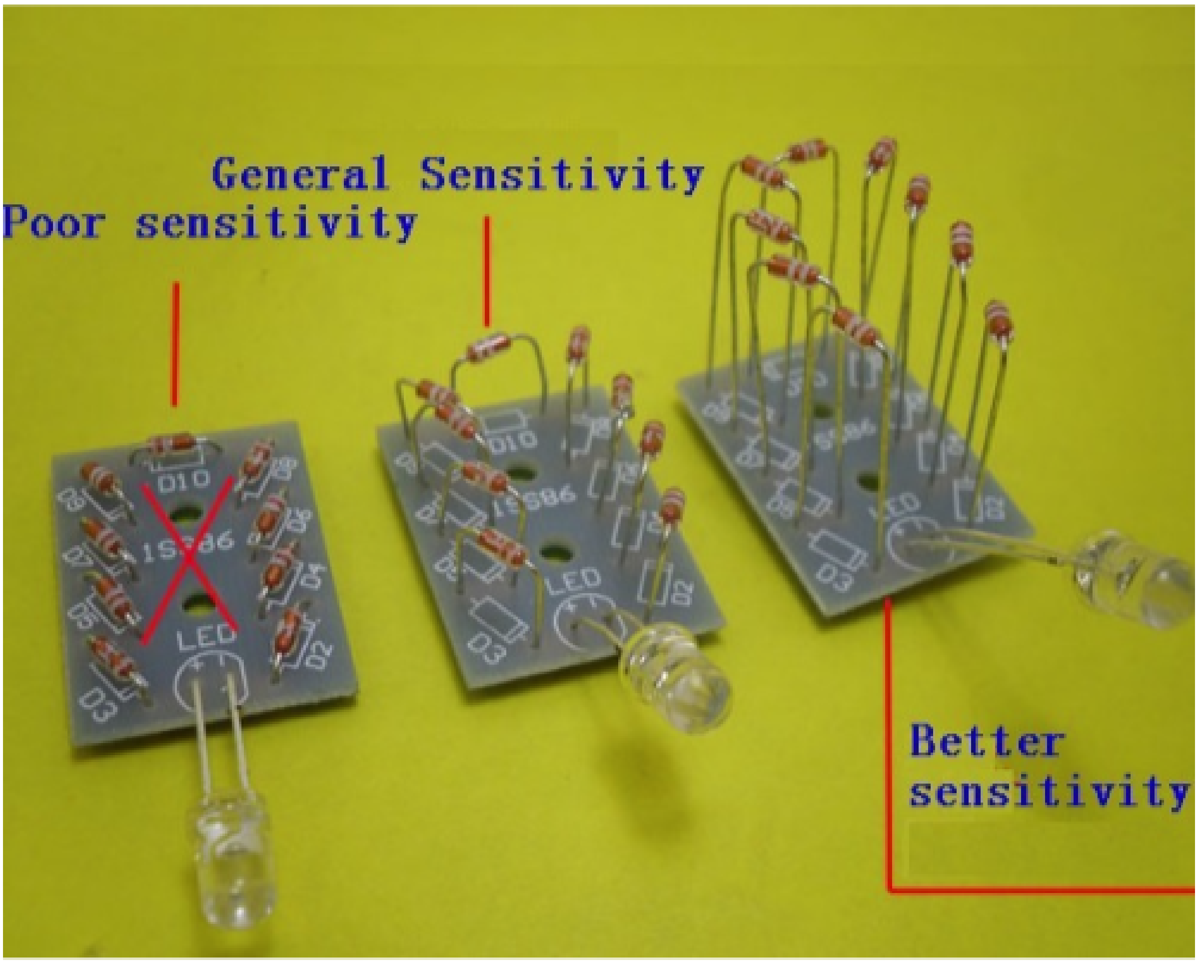
ADDITIONAL PARTS AND MATERIALS

C1—0.01-µF, ceramic-disc capacitor
L1—470-µH coil
ANT1—See text
M1—0–200-µA meter
S1—SPST toggle or slide switch
B1—3- to 6-volt power source

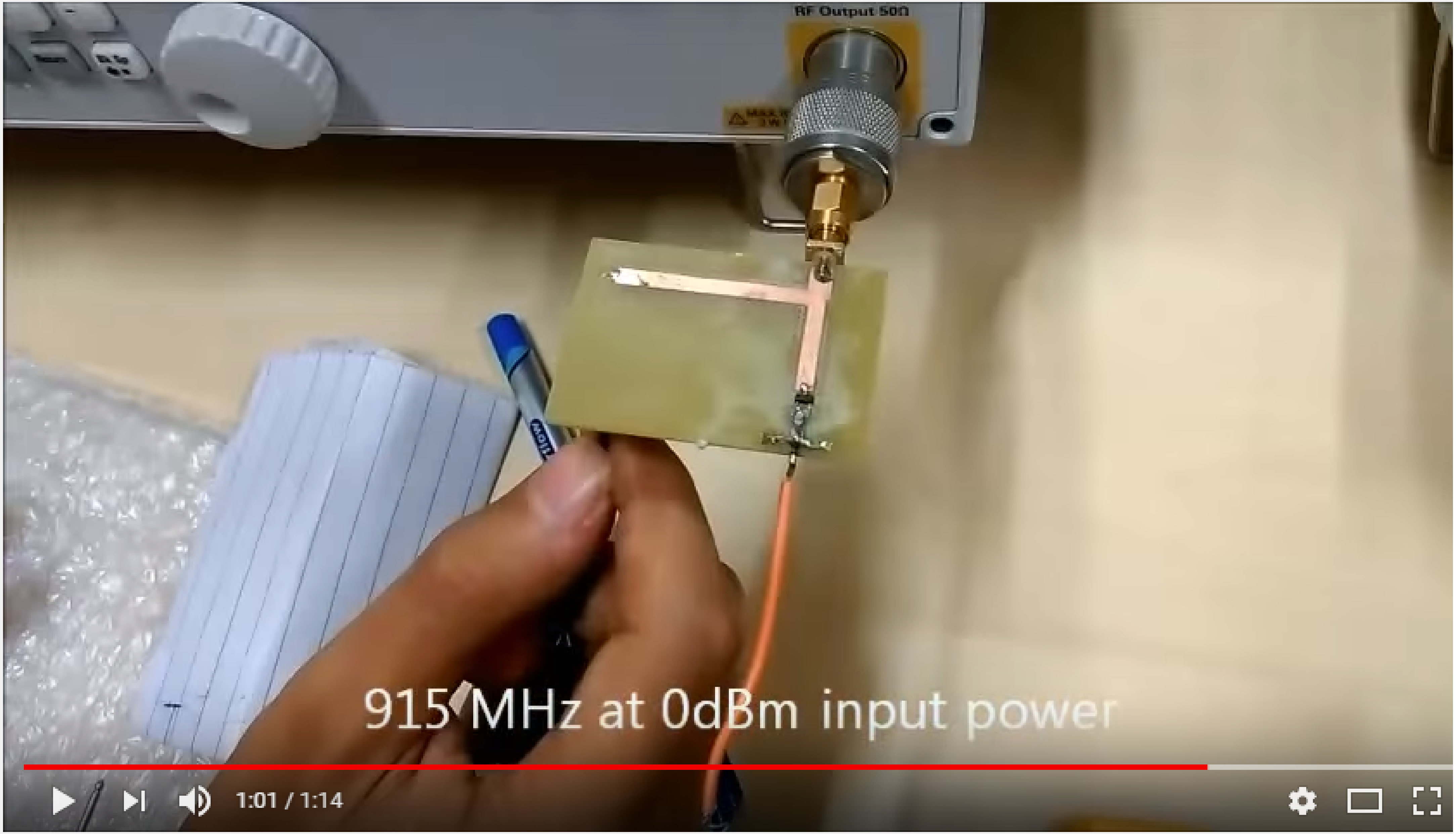
Potentiometer R3 (a 100k unit) is used to adjust the sensitivity of the circuit, by biasing the transistor near the point of conduction. The antenna (ANT1) is nothing more than a 5- to 20-inch length of wire.

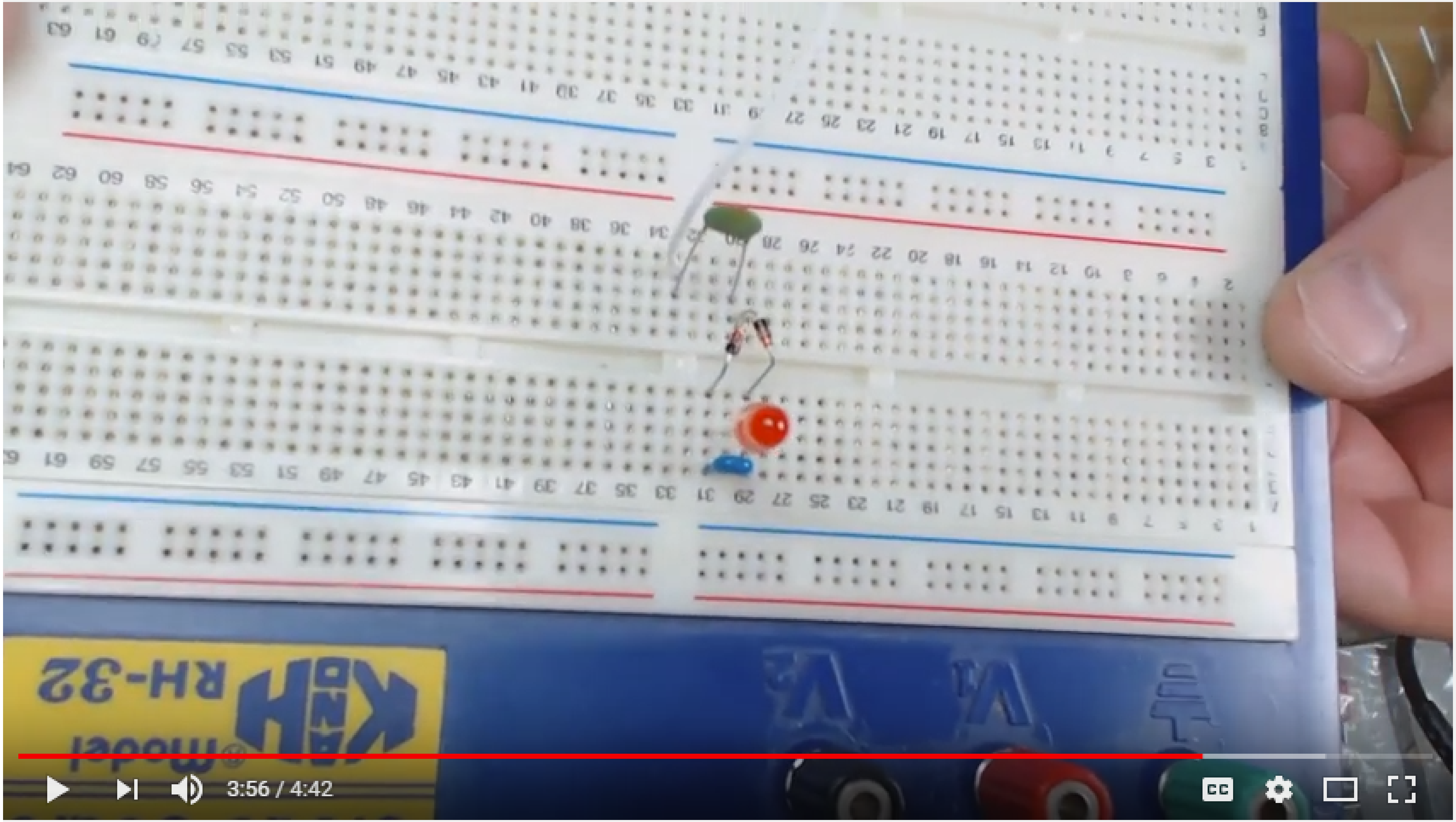
Parameters: 1. power supply voltage: No need power supply;
2. sensing distance: 5cm(max);
3. PCB board size: 2.1cm*2.8cm;
4. range of application: mobile phone GSM signal.It is useless for PHS, fixed-line telephone,CDMA mobile phone.
5. time of application: calling or In a call ;

Listing:
circuit PCB x1
1SS86 detector diode x9
5mm white green LED x1

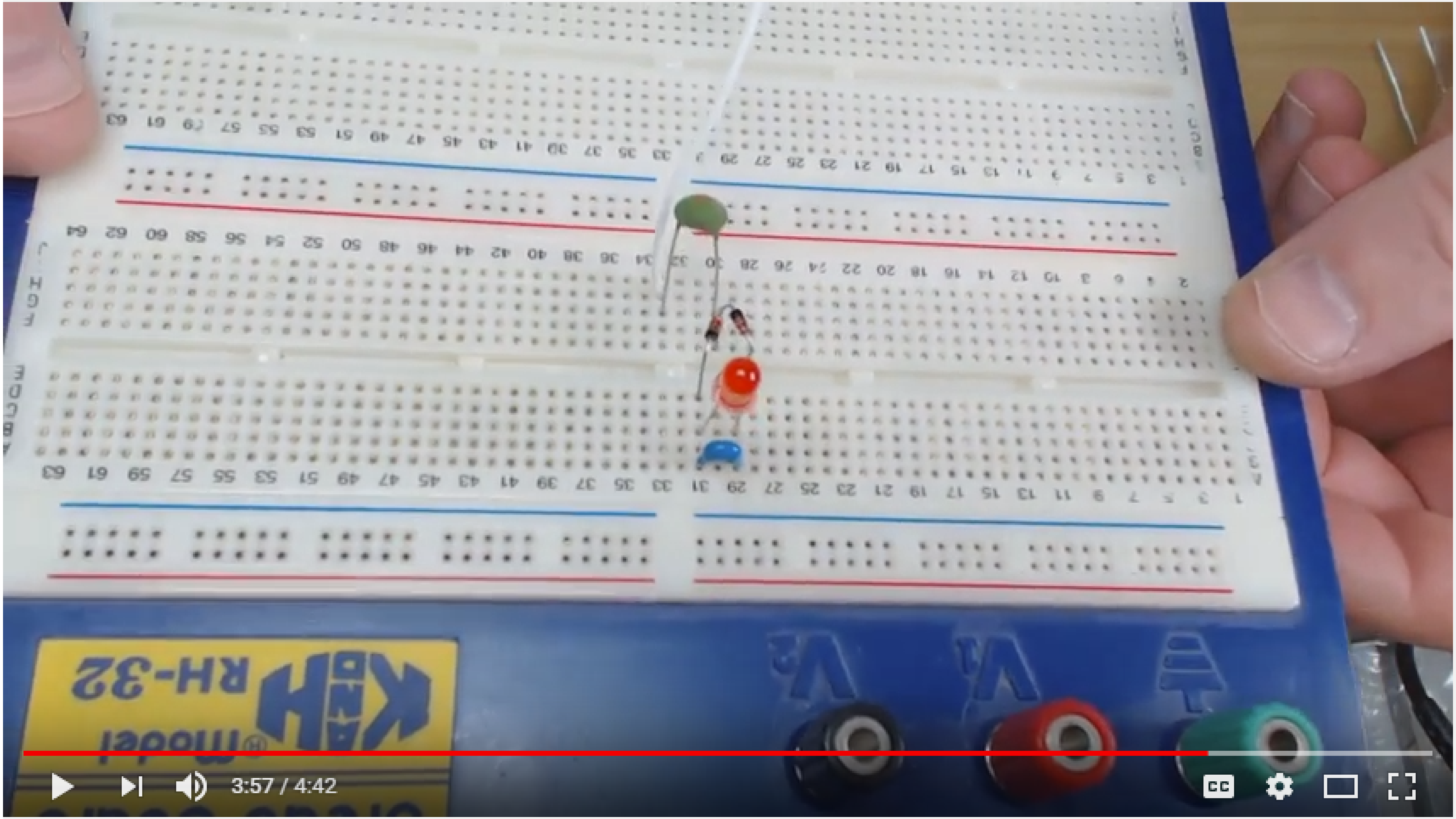


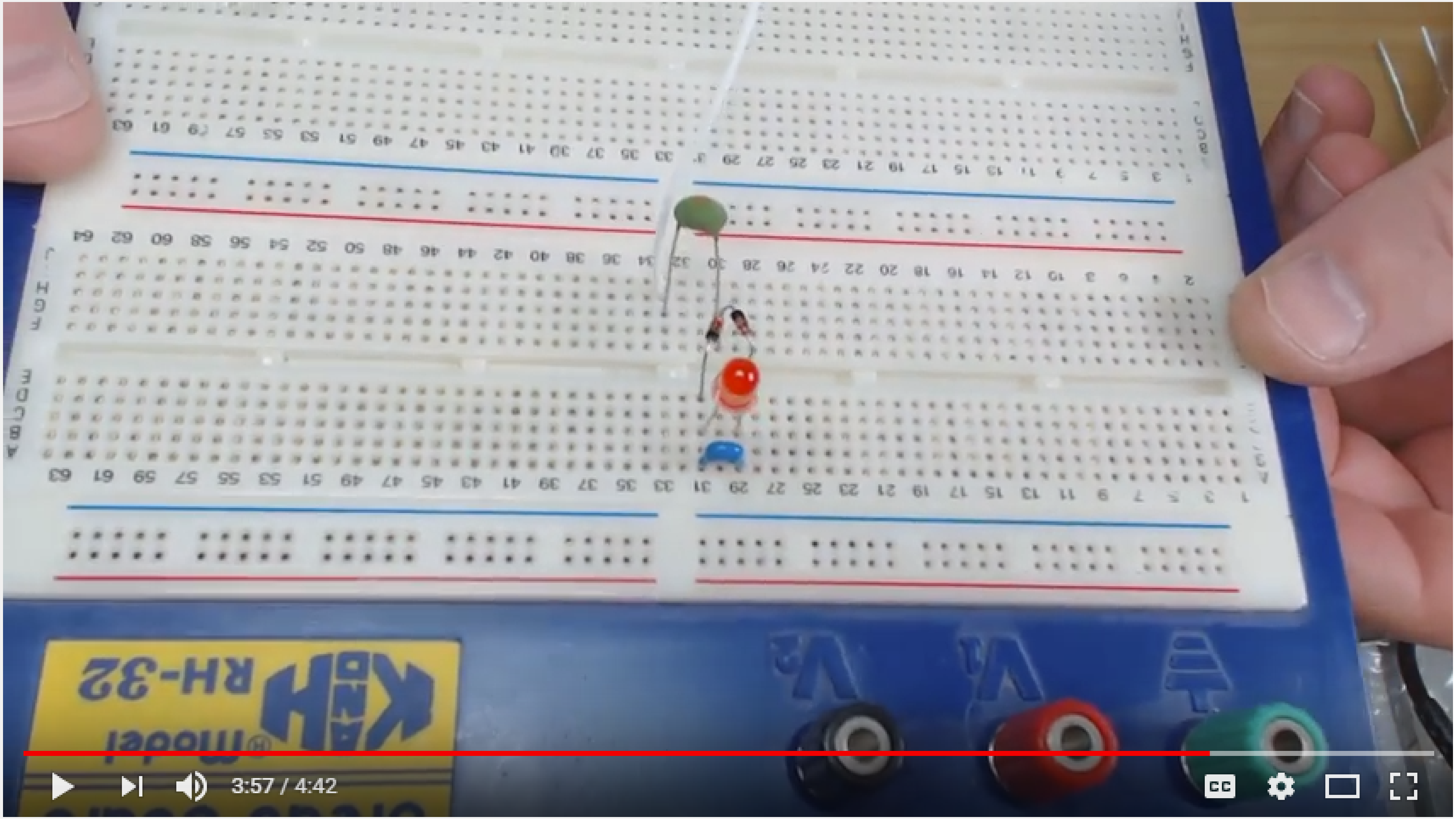
RF Power Scavenger

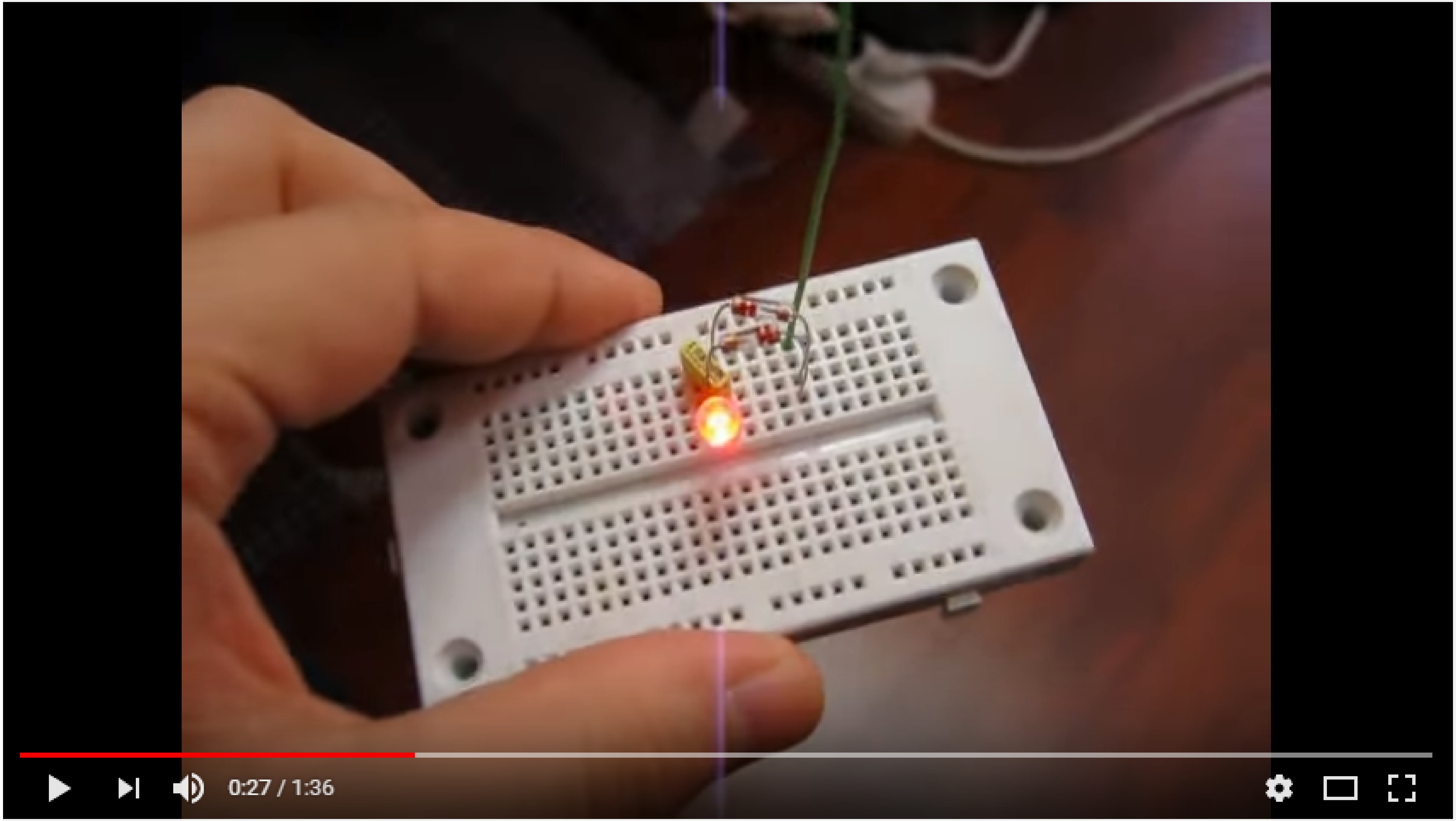

RF Output 50Ω
915 MHz at 0dBm input power
1:01 / 1:14



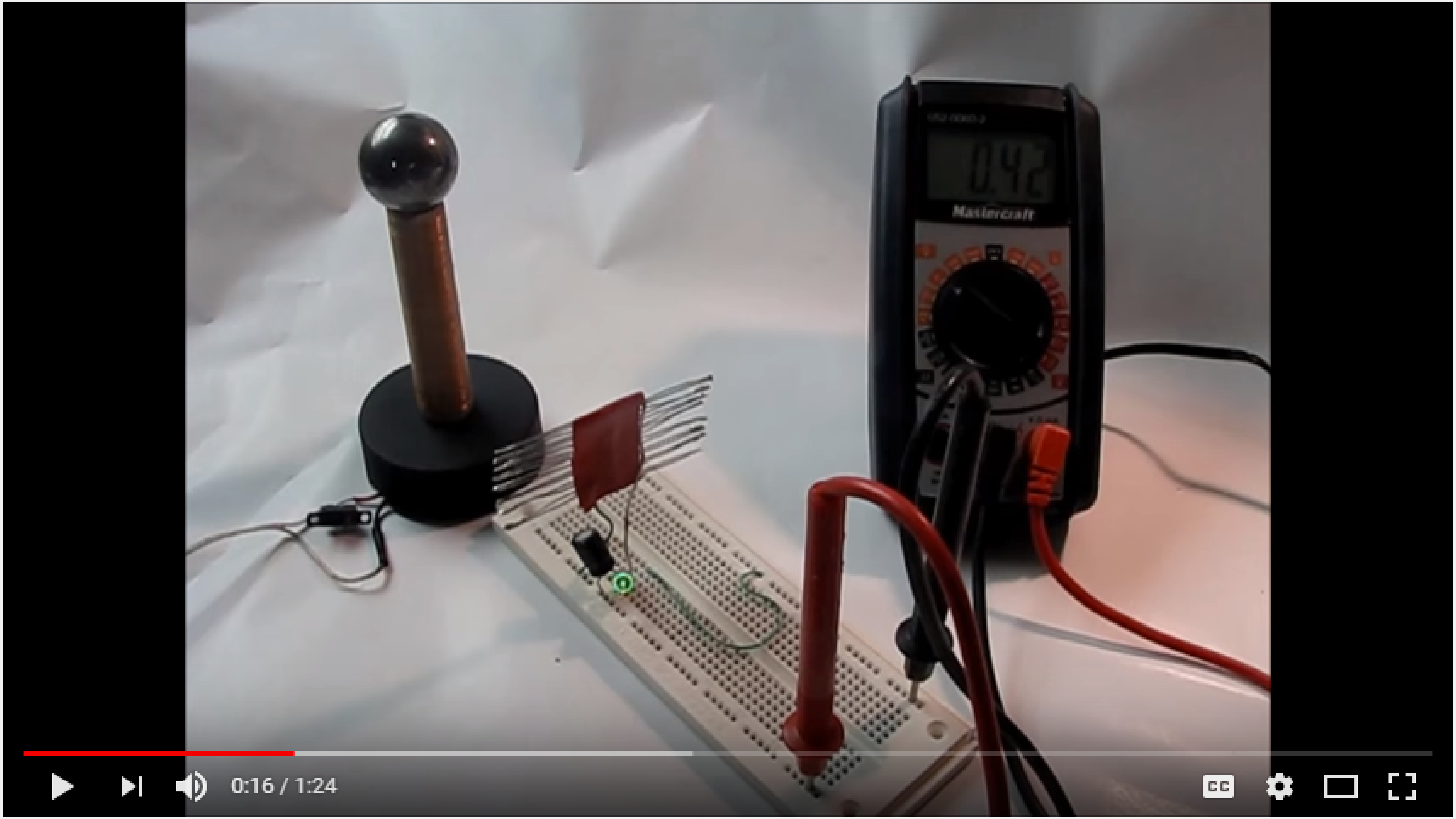
Rf Probe, Rf Detector simple circuit


3:57 / 4:42

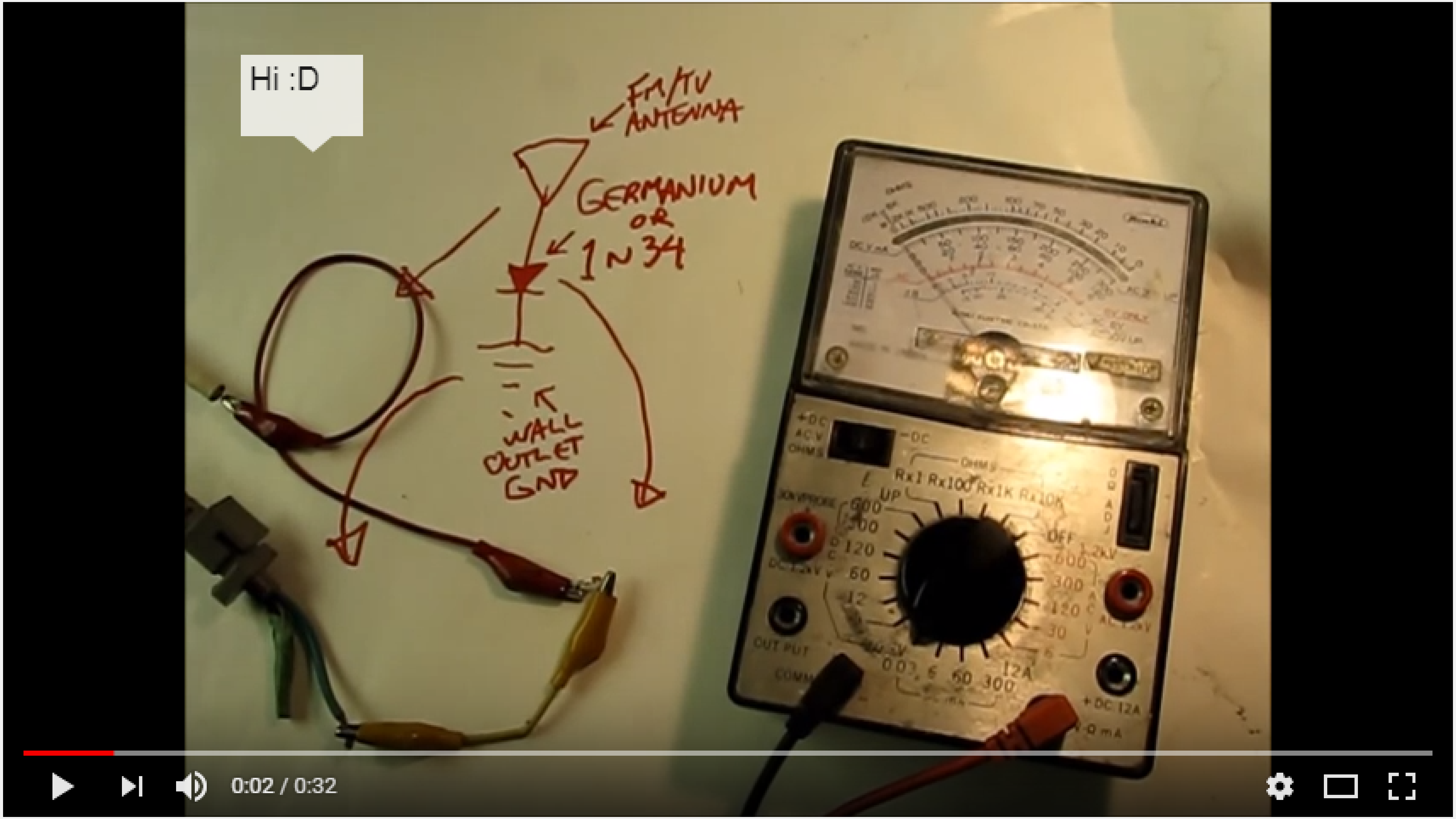

3:57 / 4:42



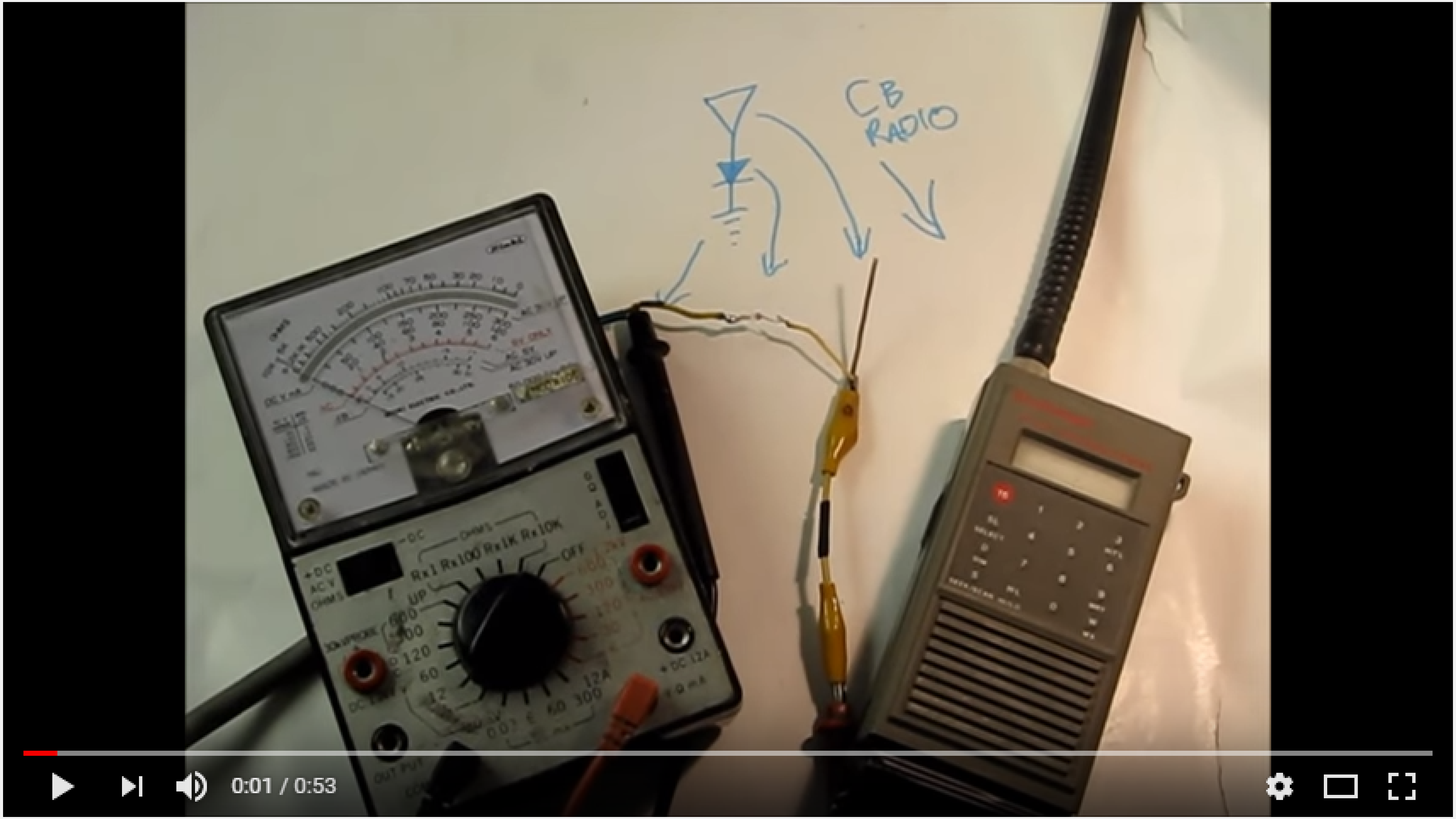
Electric on the air with 7W Booster



DIY Wireless Power - Part 5: DIY Simple Rectennas!

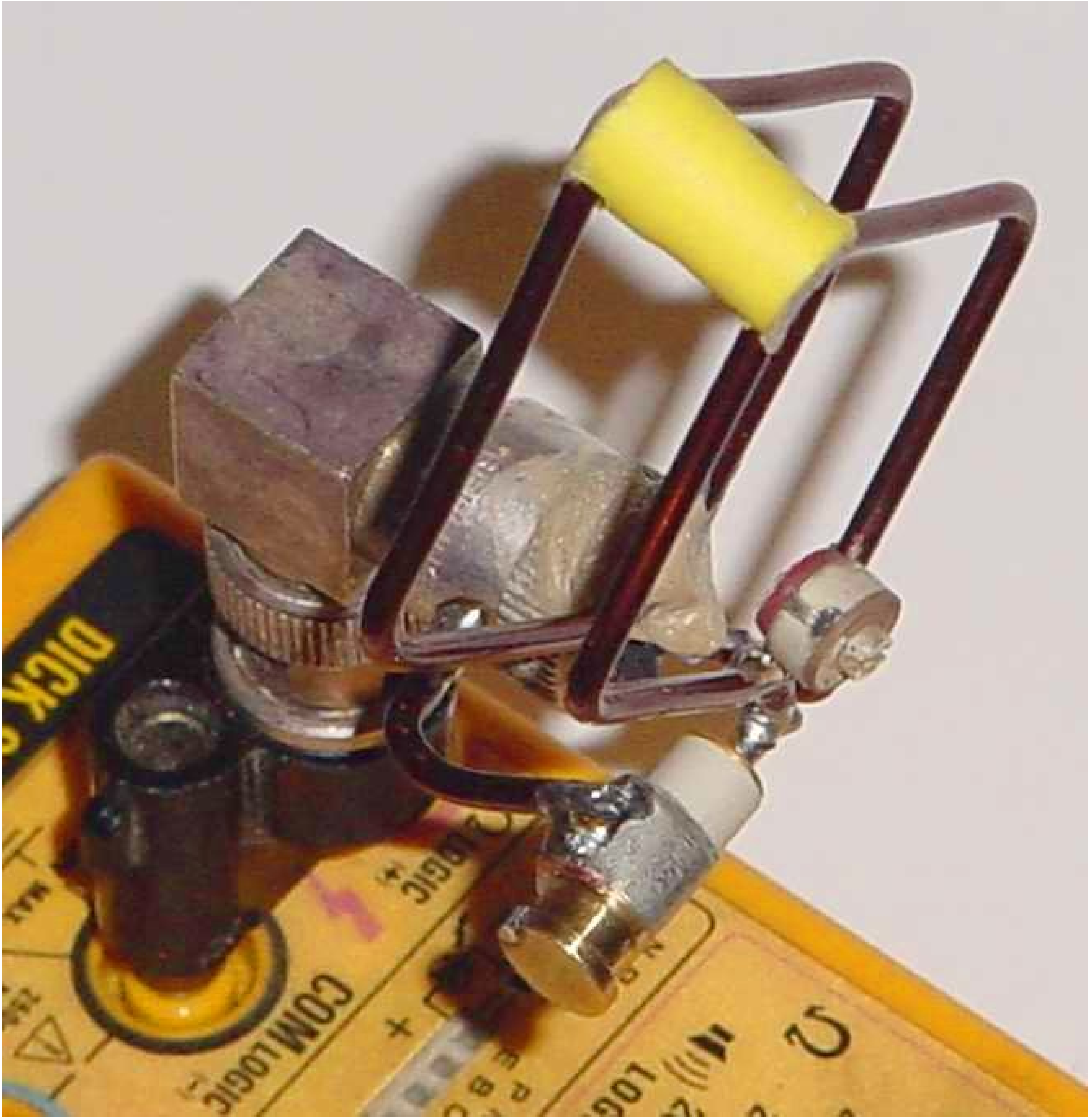


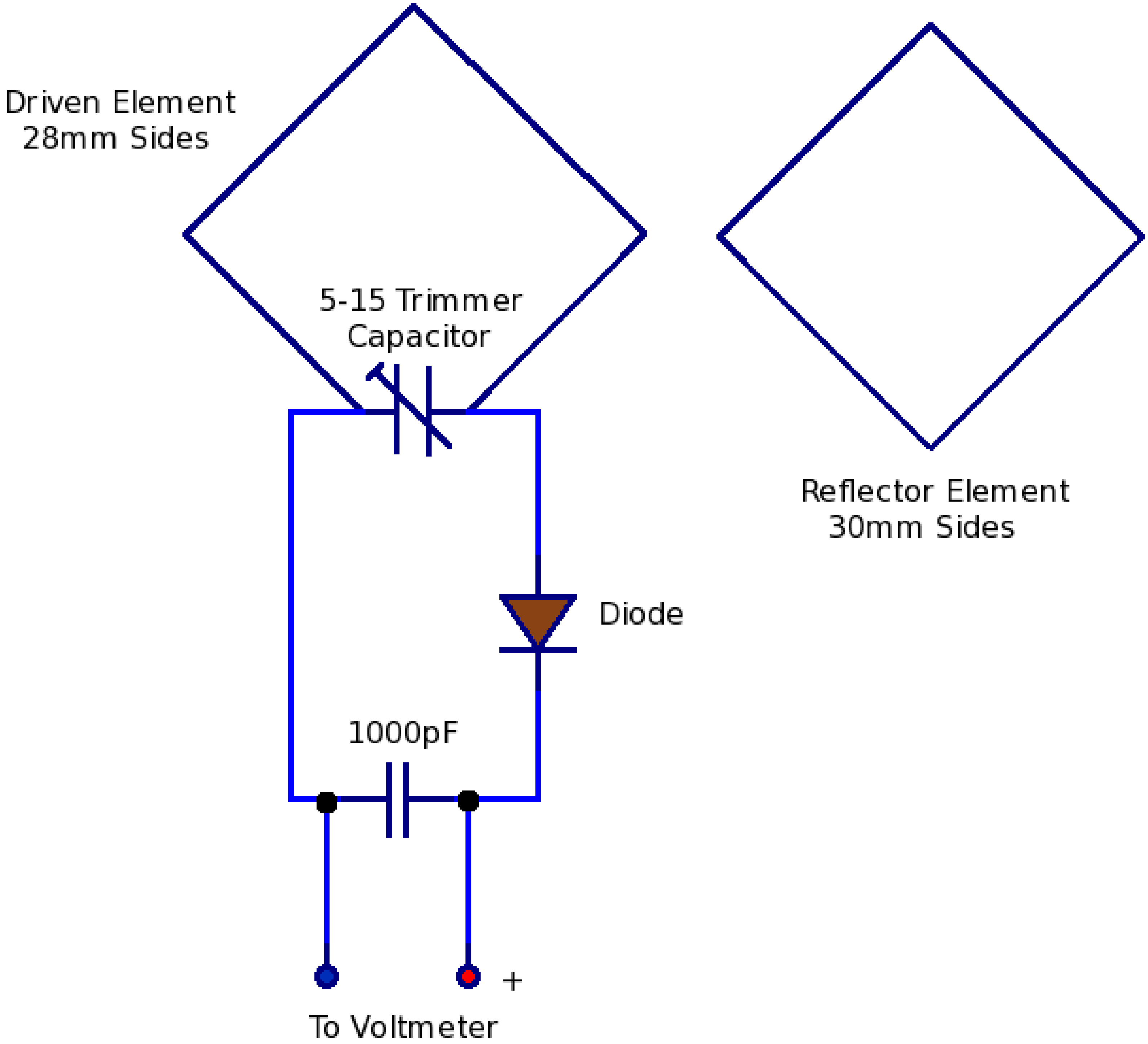
DIY Wireless Power - Part 1: TV/FM Antenna,1N34/Germanium Diode

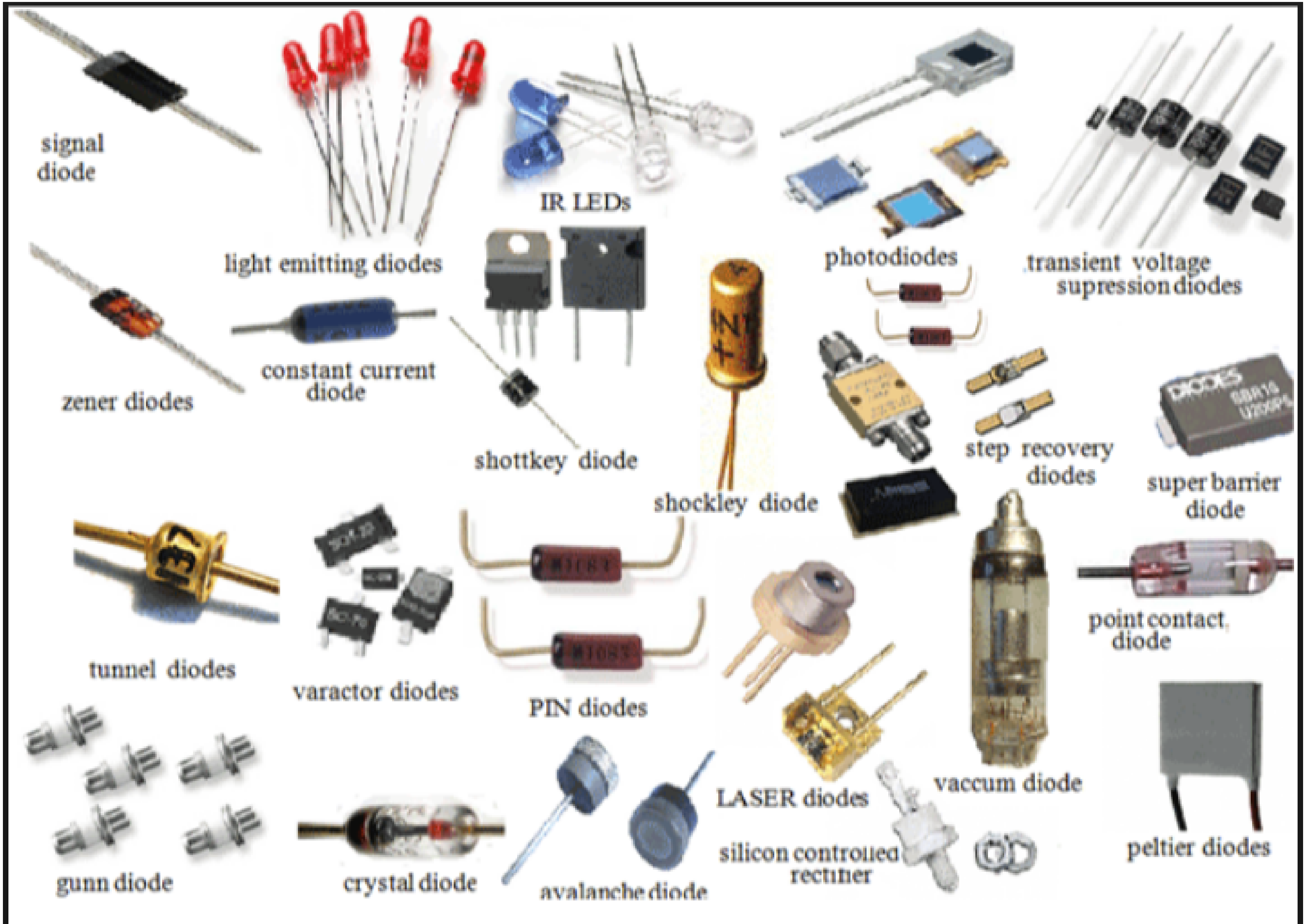


DIY Wireless Power - Part 2: Simple Wireless Power Transmission!

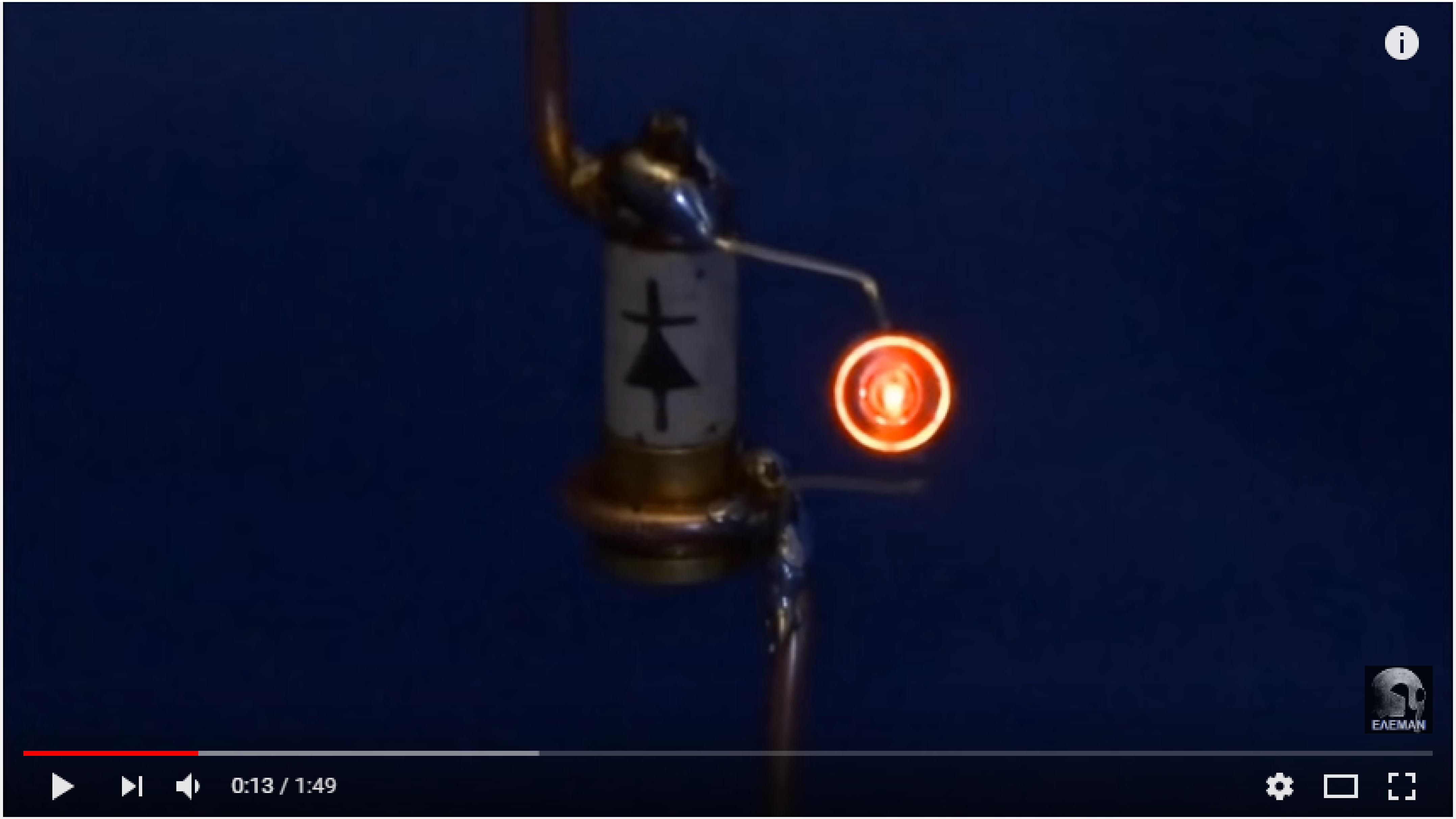

Hz
NPN
EBCE
PNP
EBCE
COM
LOGIC
200
2K
2M
500V MAX


COM LOGIC


Driven Element
28mm Sides
5-15 Trimmer
Capacitor
Reflector Element
30mm Sides
Diode
1000pF
+
To Voltmeter



Types of Diode



Free Energy Microwaves Experiment.1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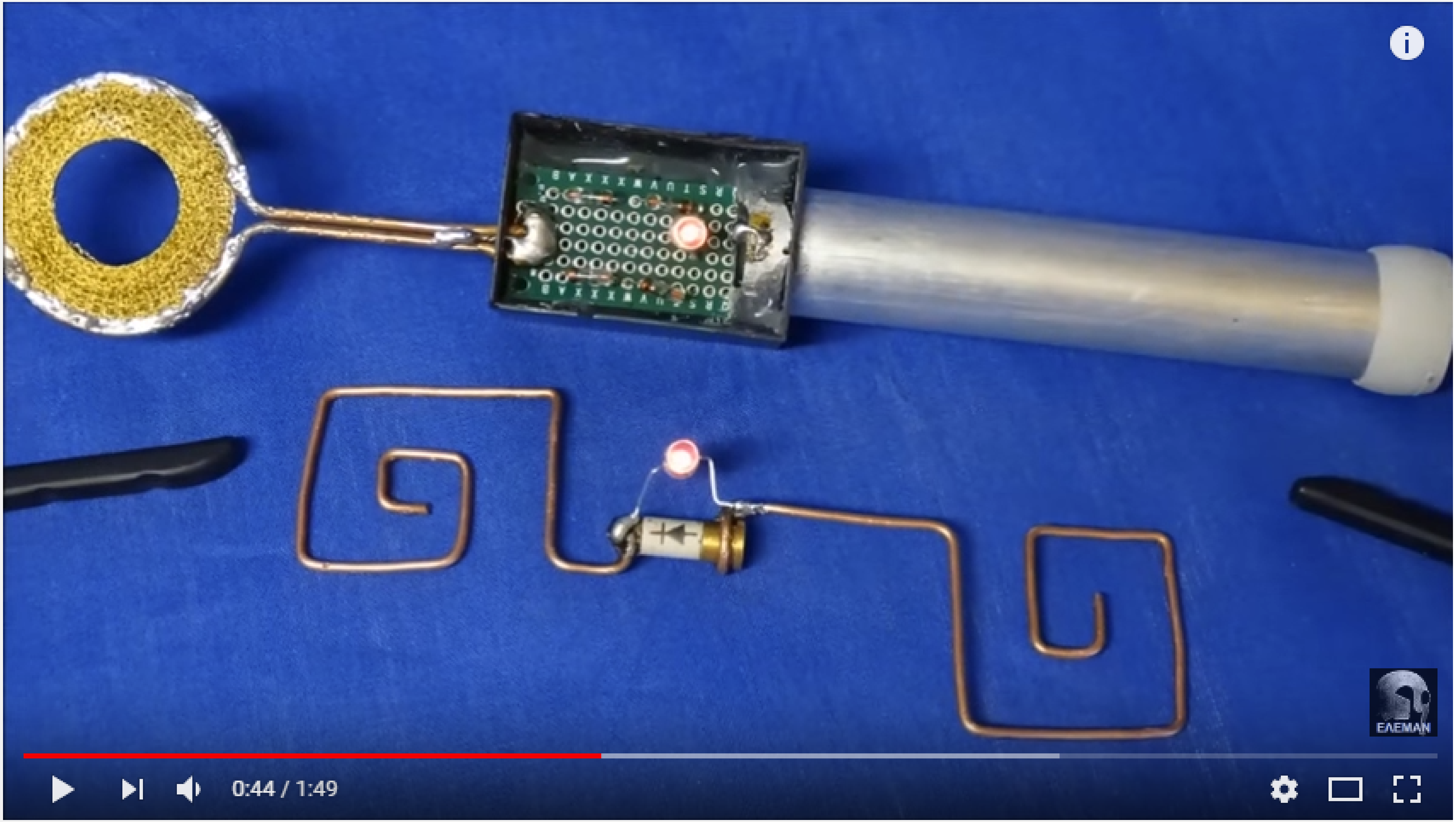
0:21 / 1:49


0:26 / 1:49
ΕΛΕΜΑΝ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ΕΛΕΜΑΝ
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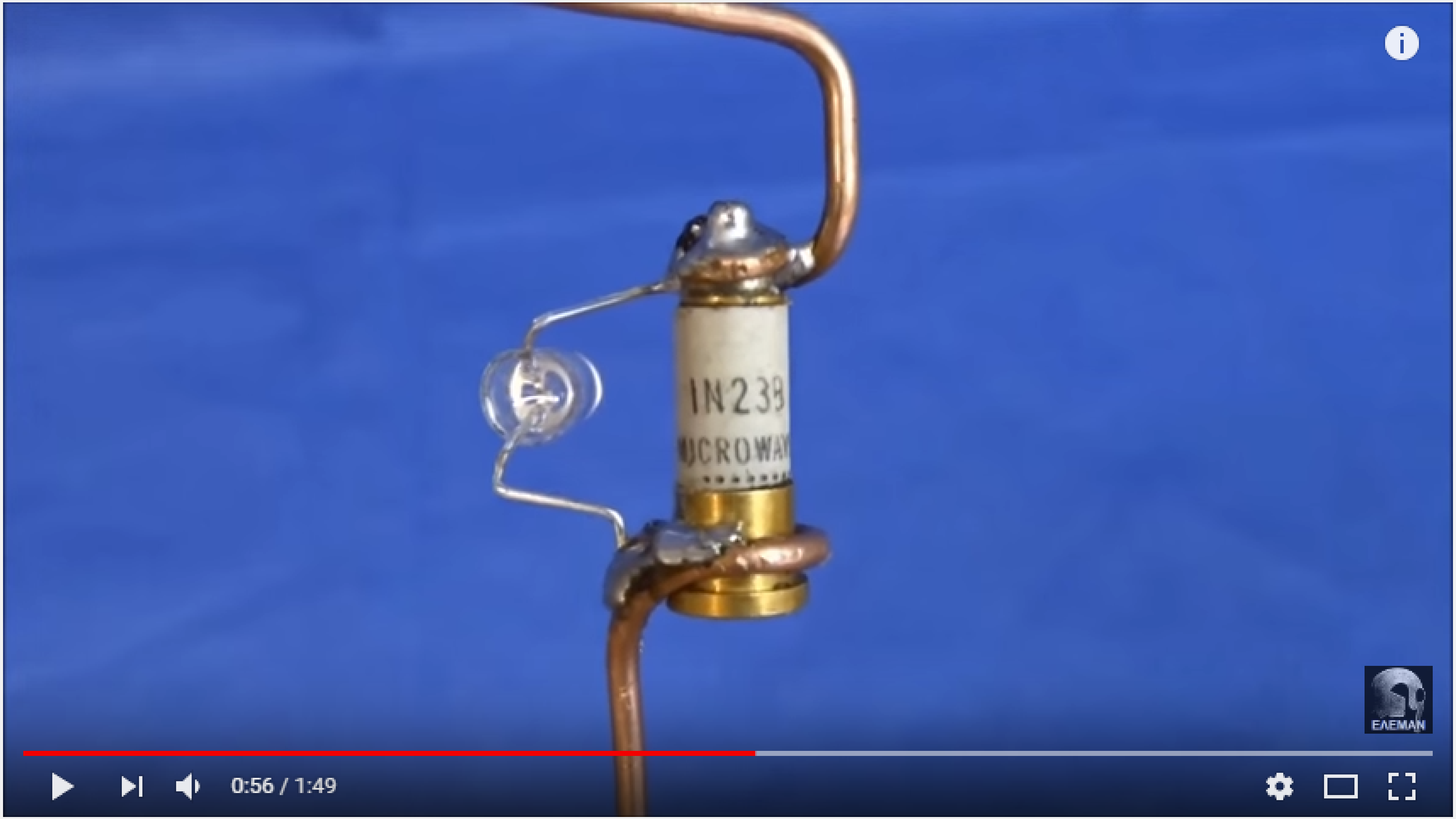
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ΕΛΕΜΑΝ
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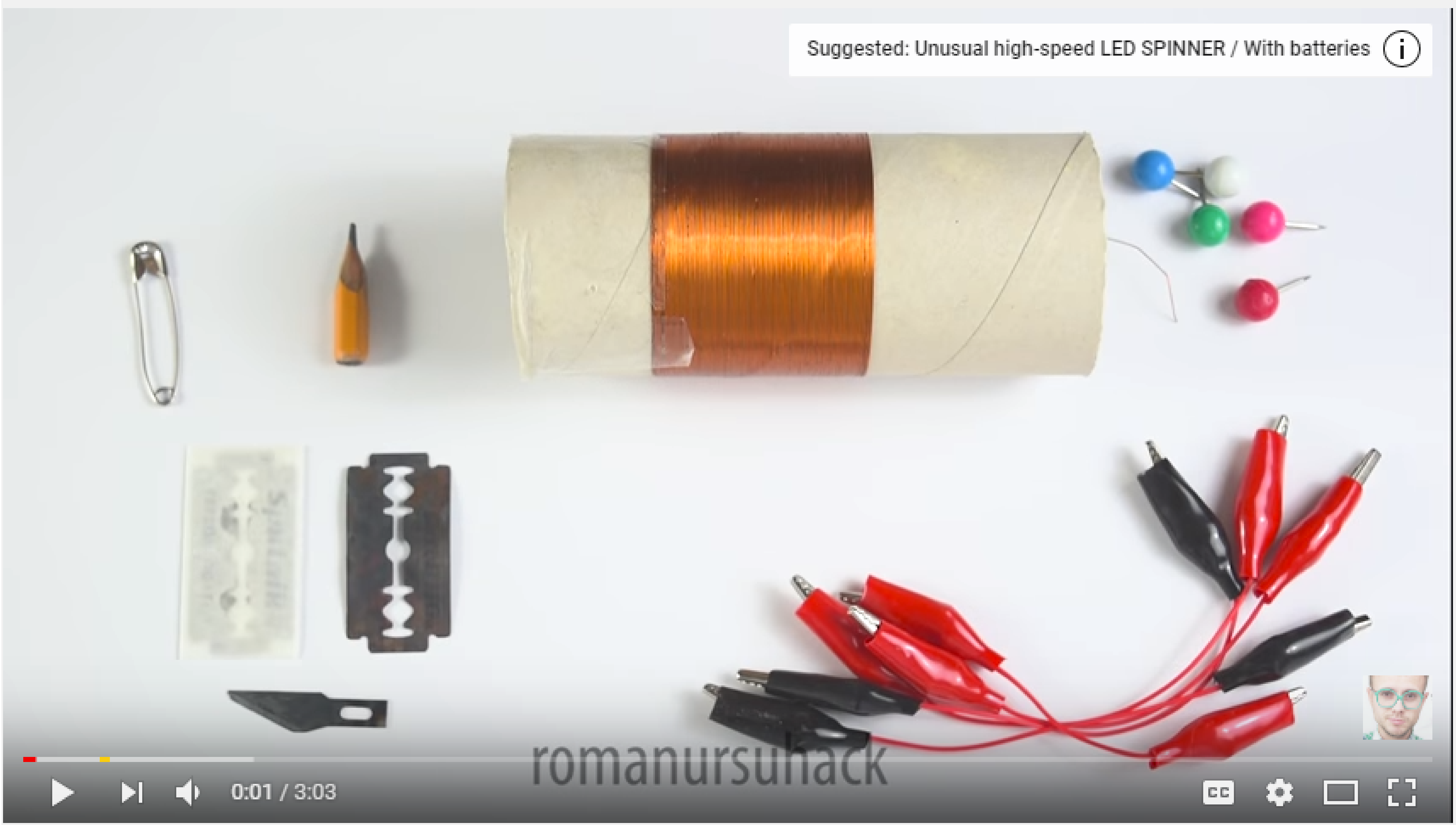
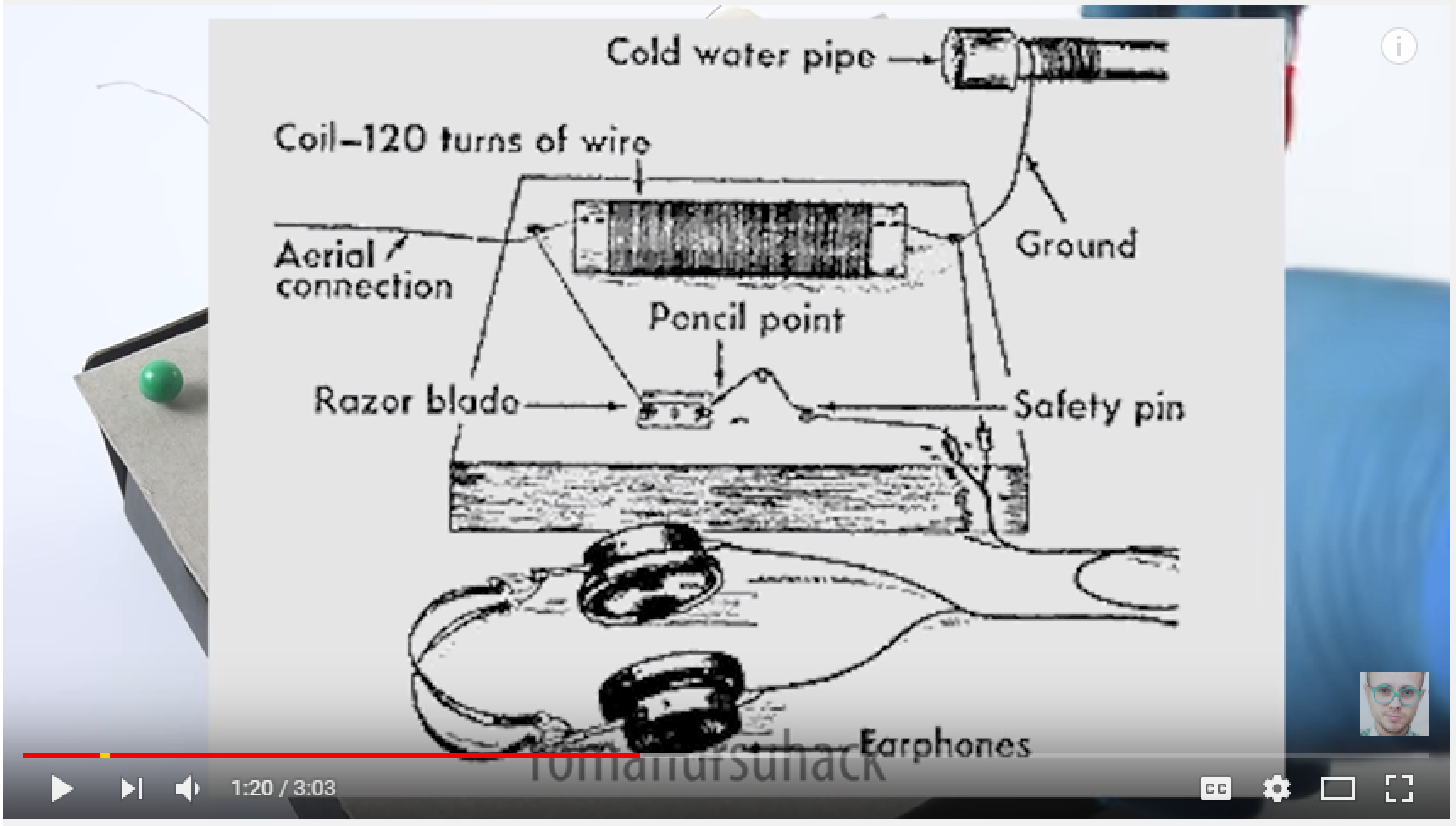
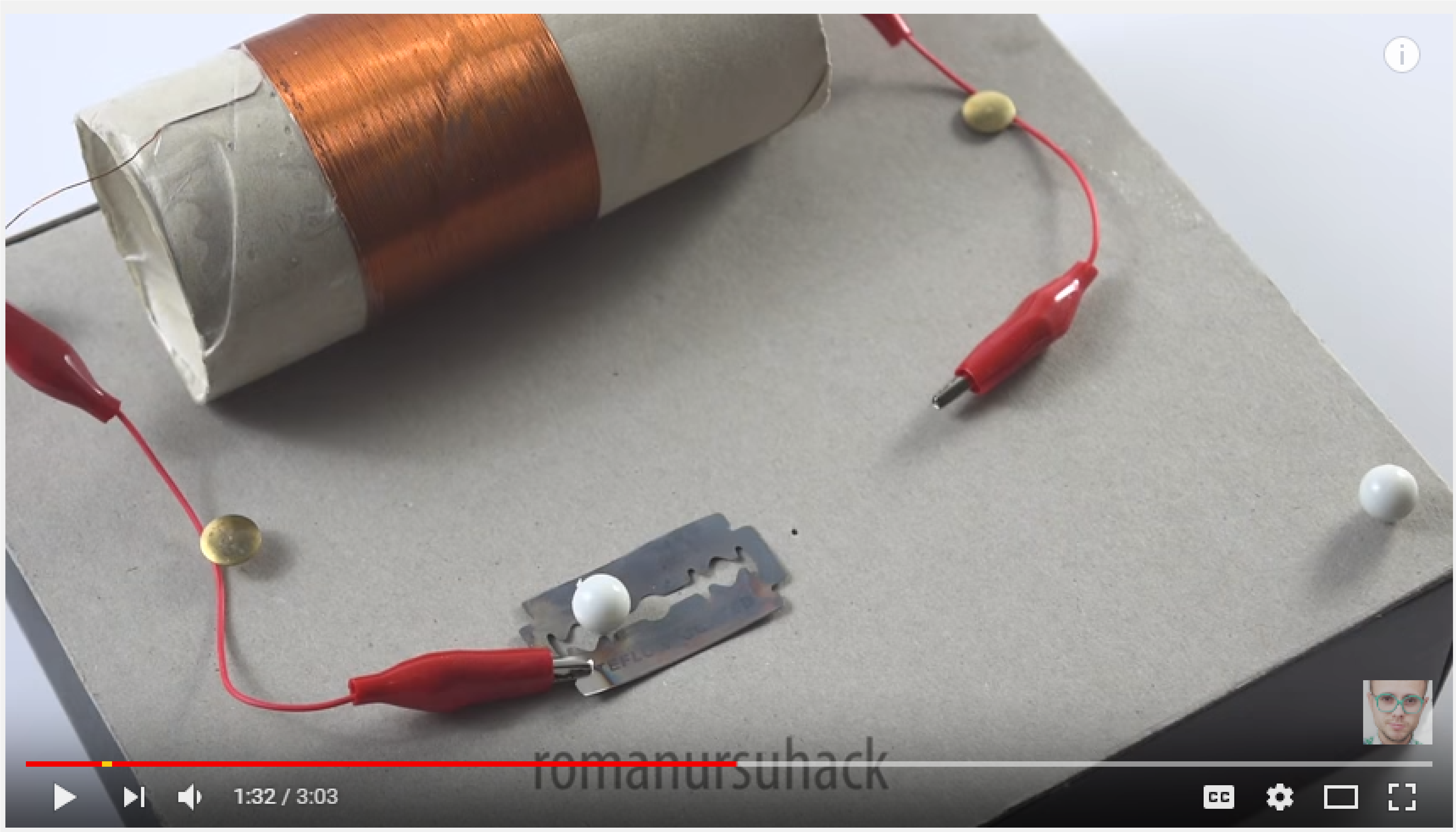


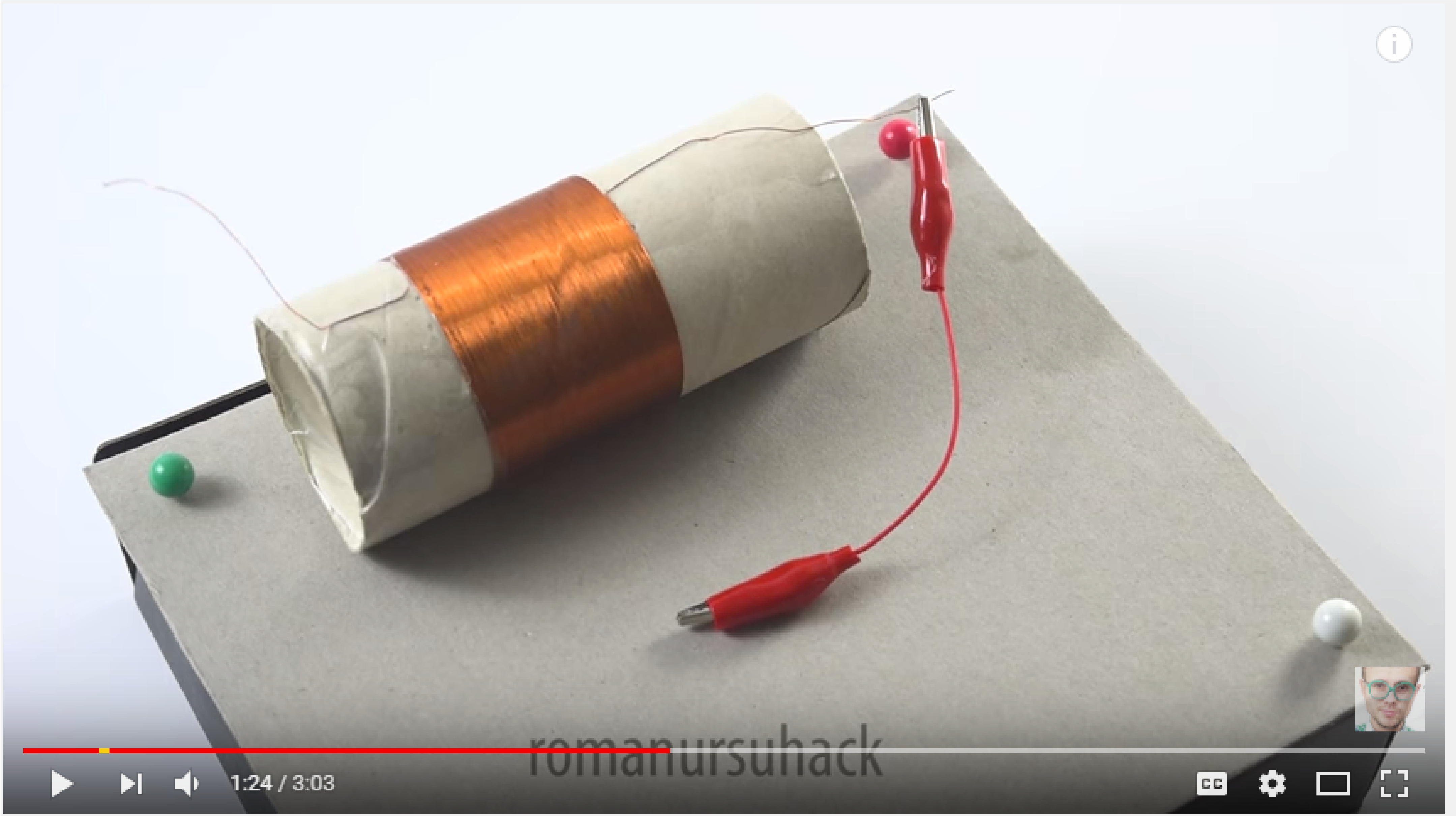
FOXHOLE RADIO FROM THE PENCIL AND THE BLADE / TUTORIAL

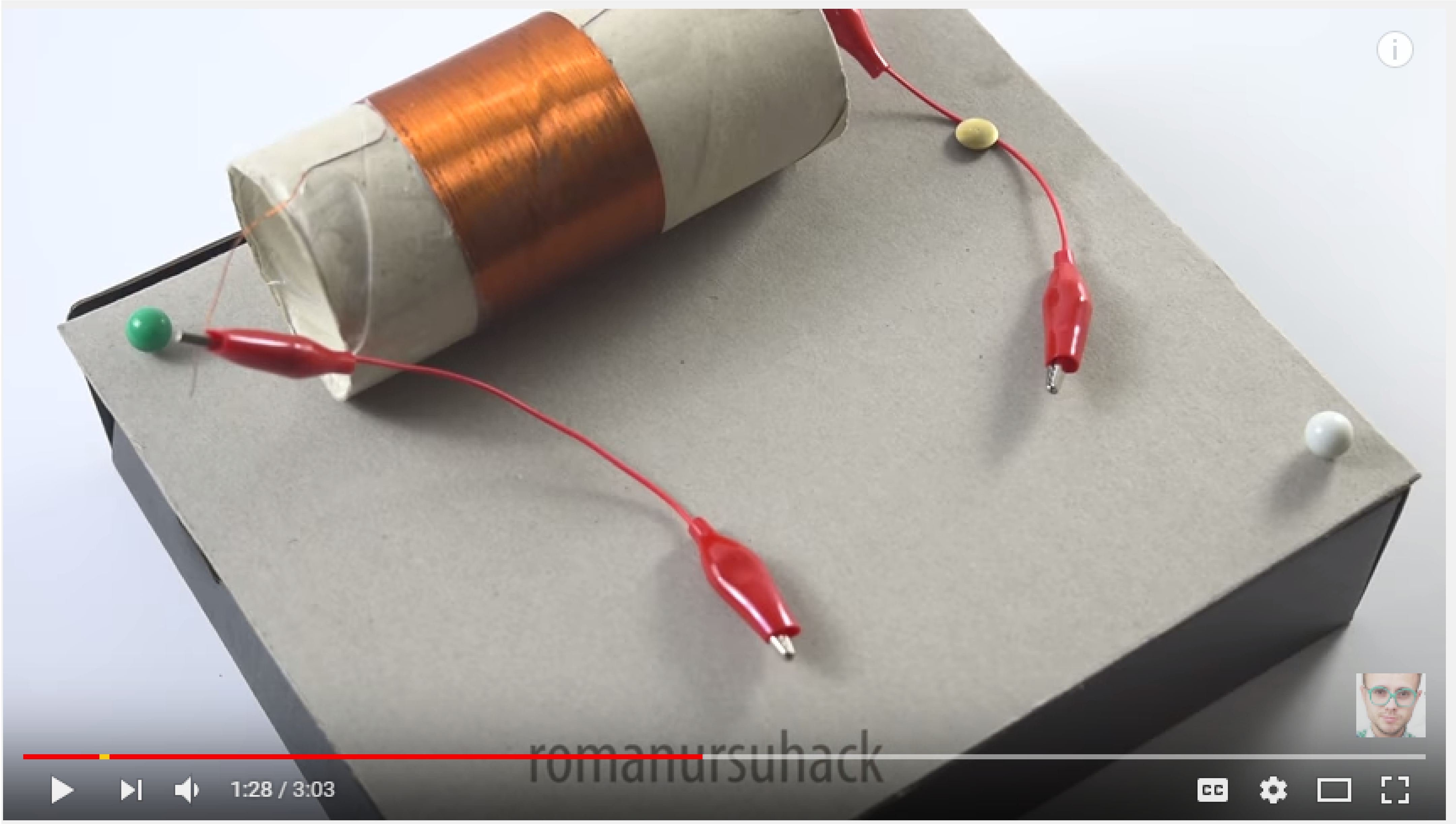

romanursuhack
0:55 / 3:03

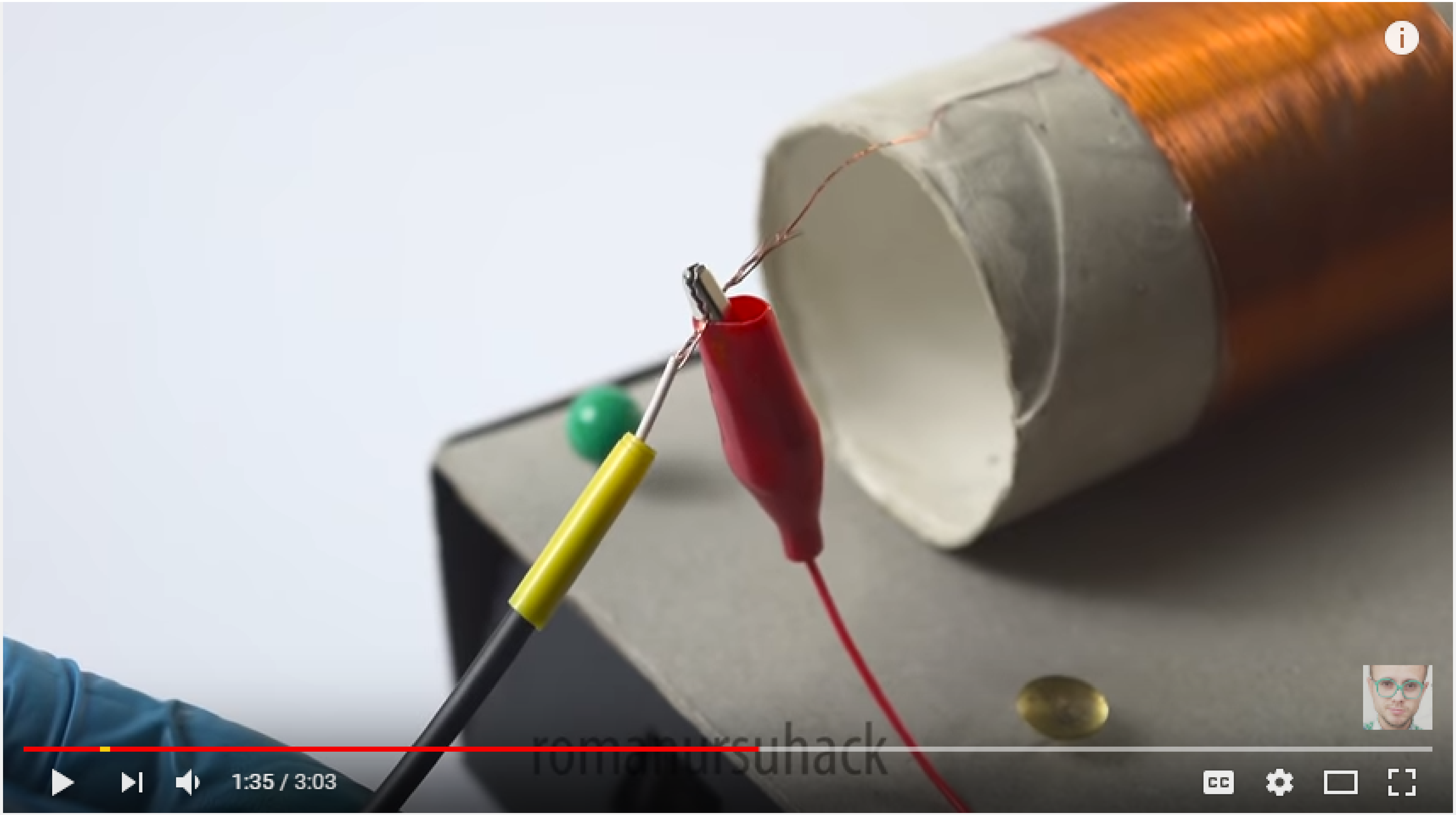

Cold water pipe
Coil–120 turns of wire
Aerial connection
Ground
Pencil point
Razor blade
Safety pin
Earphones
1:20 / 3:03

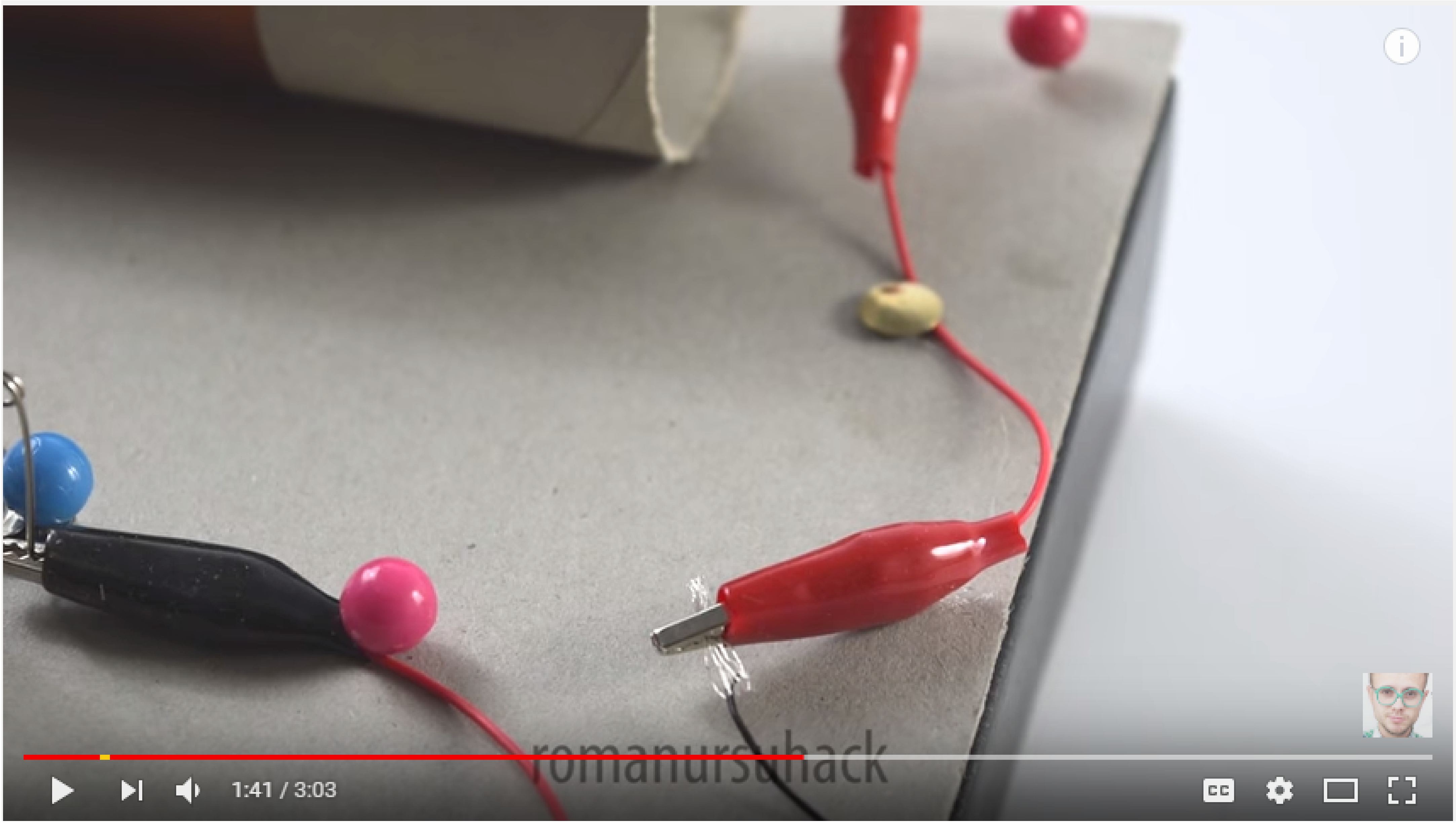

romanursuhack
1:32 / 3:03

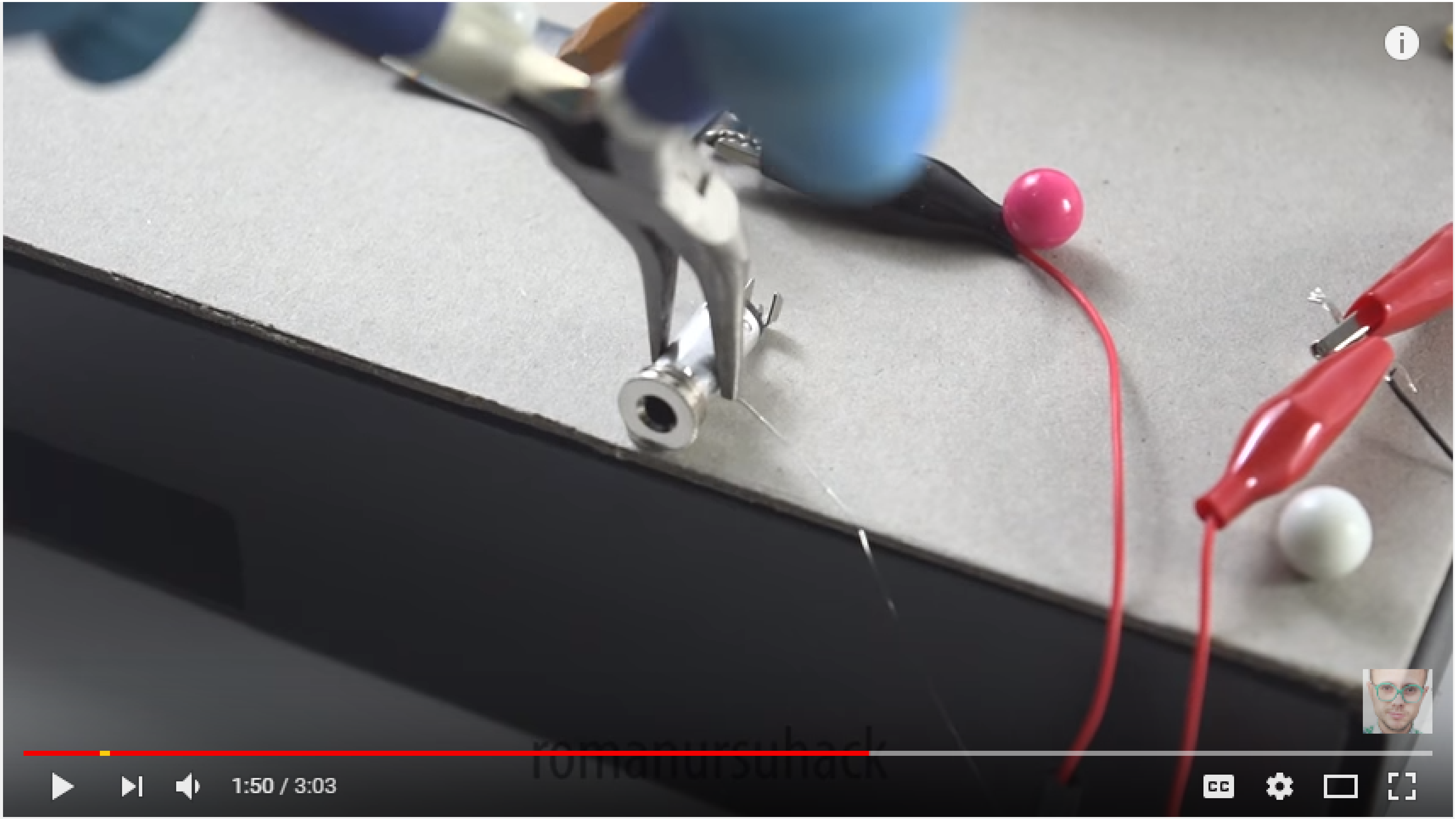

romanursuhack
1:34 / 3:03


romanursuhack
1:24 / 3:03

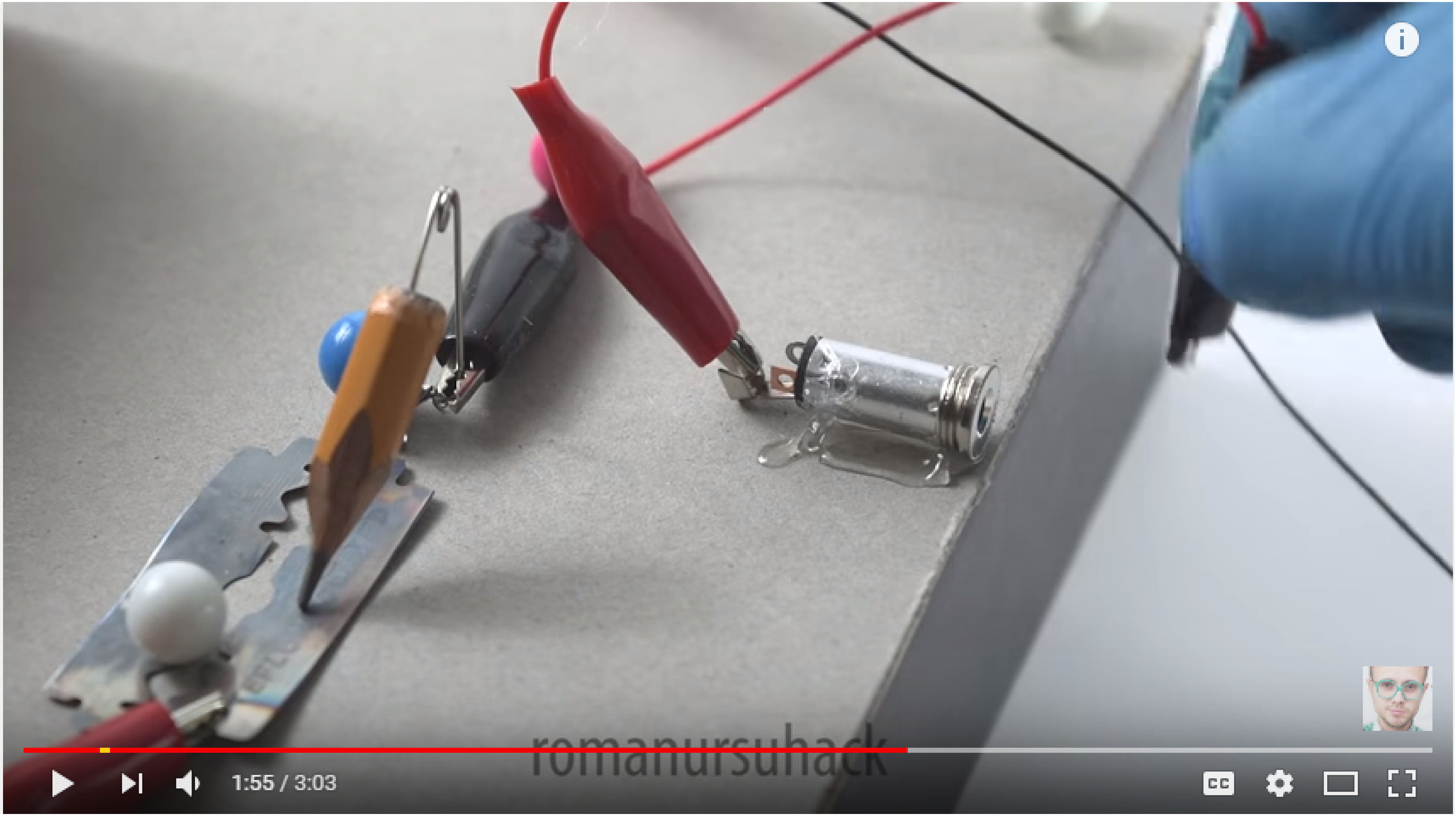

romanursuhack
1:28 / 3:03

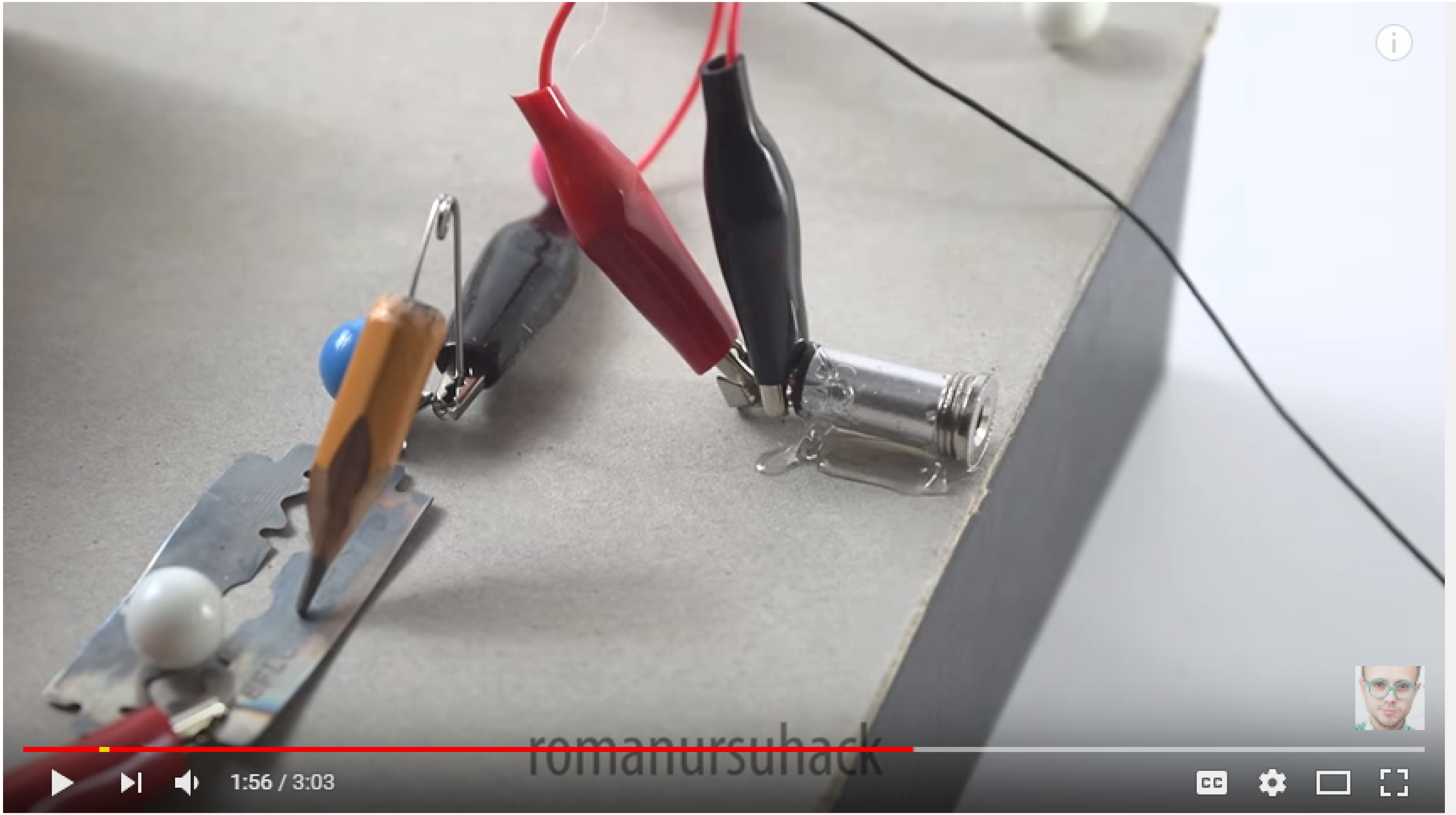

romanursuhack
1:35 / 3:03

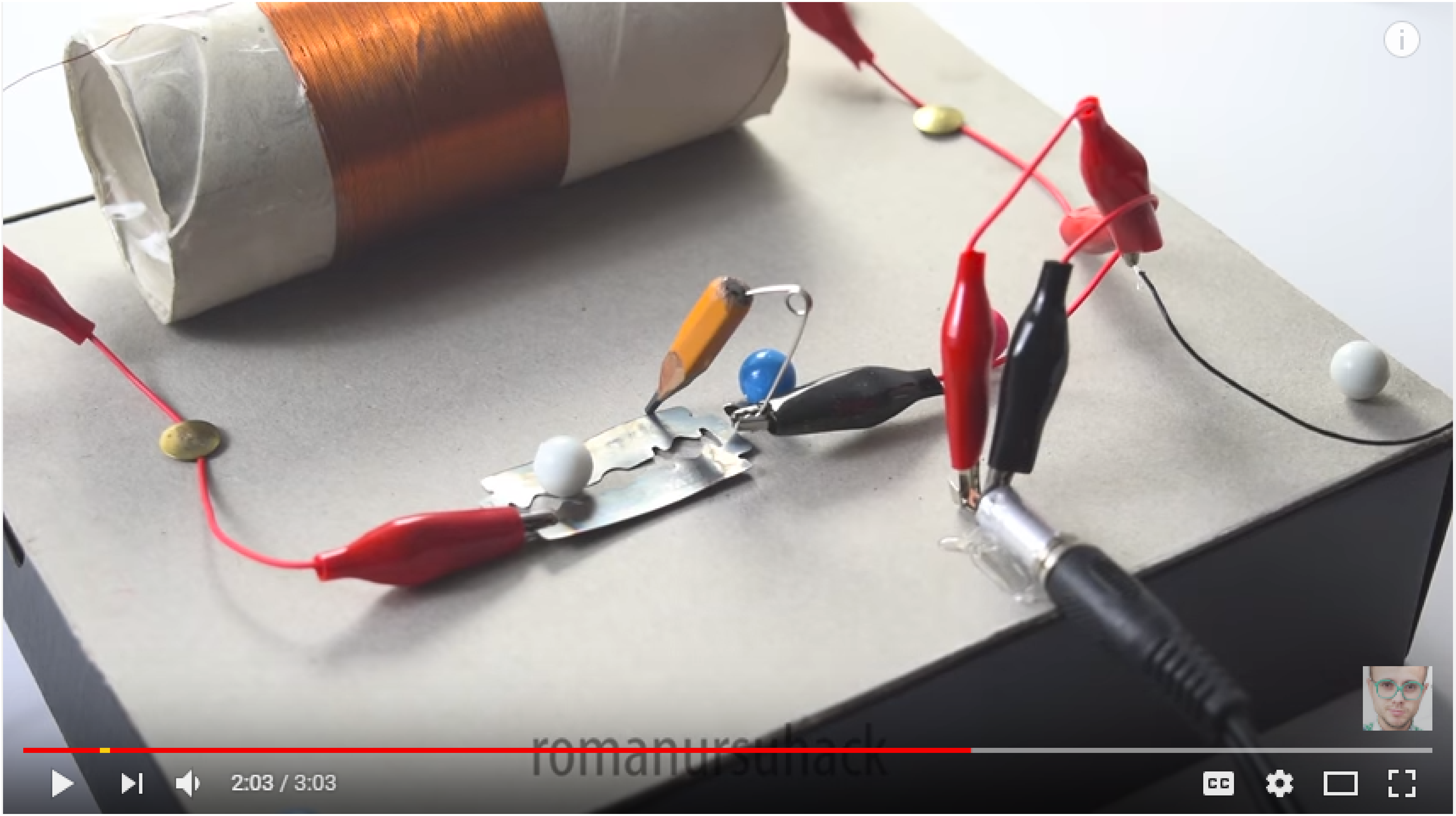

romanursuhack
1:41 / 3:03

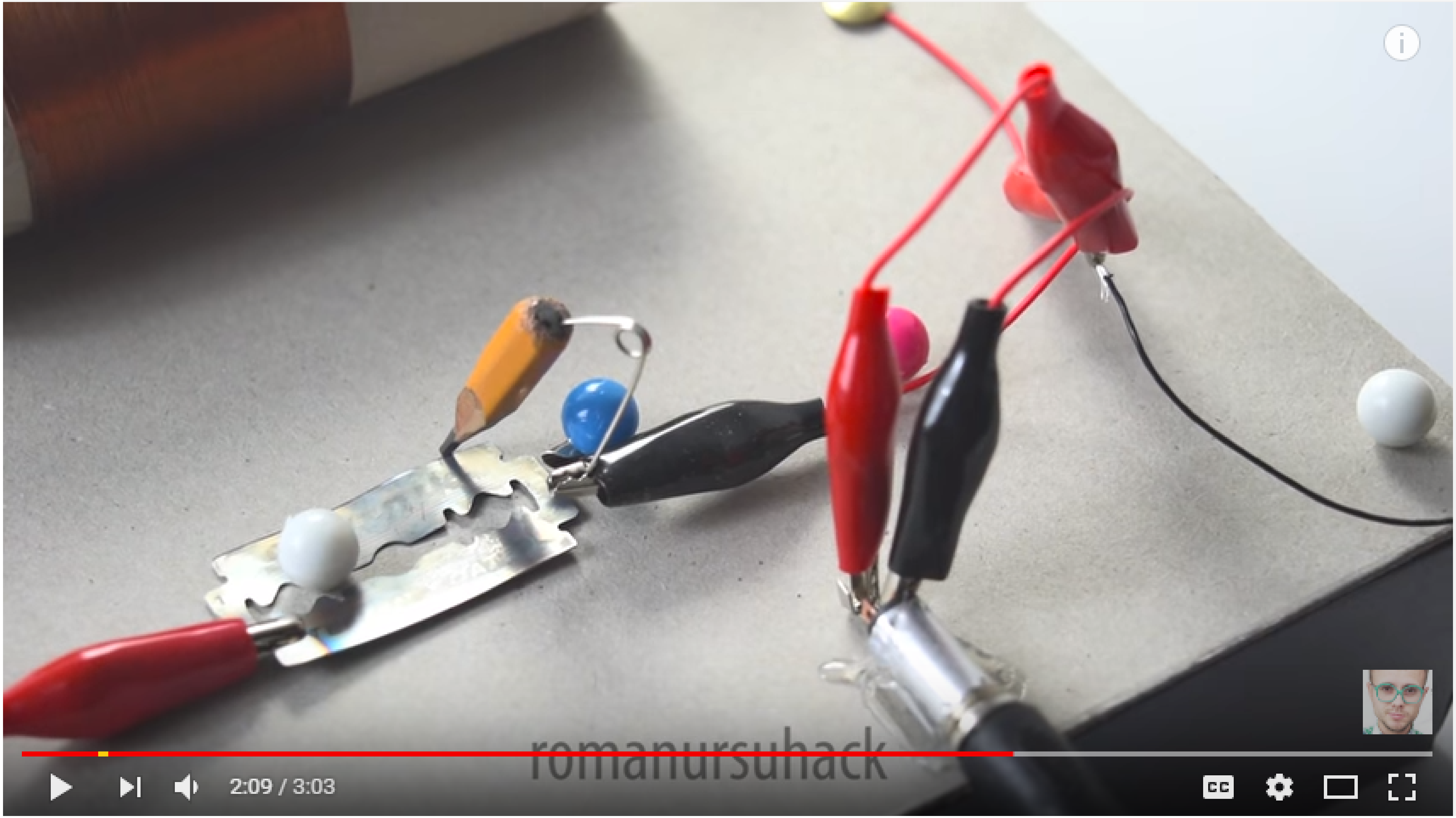

romanursuhack
1:50 / 3:03


POWER
ON
OFF
INPUT
R
L
L-SPK
OUTPUT
~220V
romanursuhack
1:52 / 3:03


romanursuhack
1:55 / 3:03


romanursuhack
1:56 / 3:03


romanursuhack
2:03 / 3:03


romanursuhack
2:09 / 3:03


romanursuhack
2:31 / 3:03

VK3YE Crystal Set

Schematic & Layout diagrams

Press Back button to return to main article

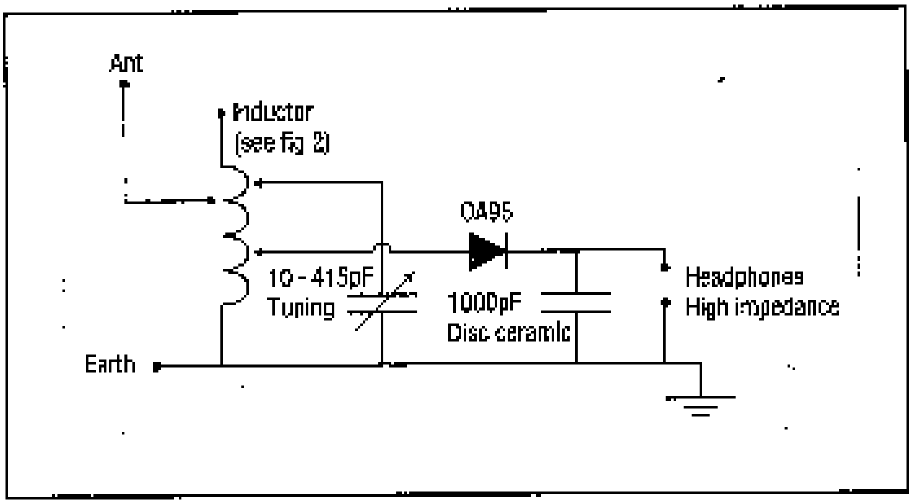


Figure One: Schematic diagram of crystal set

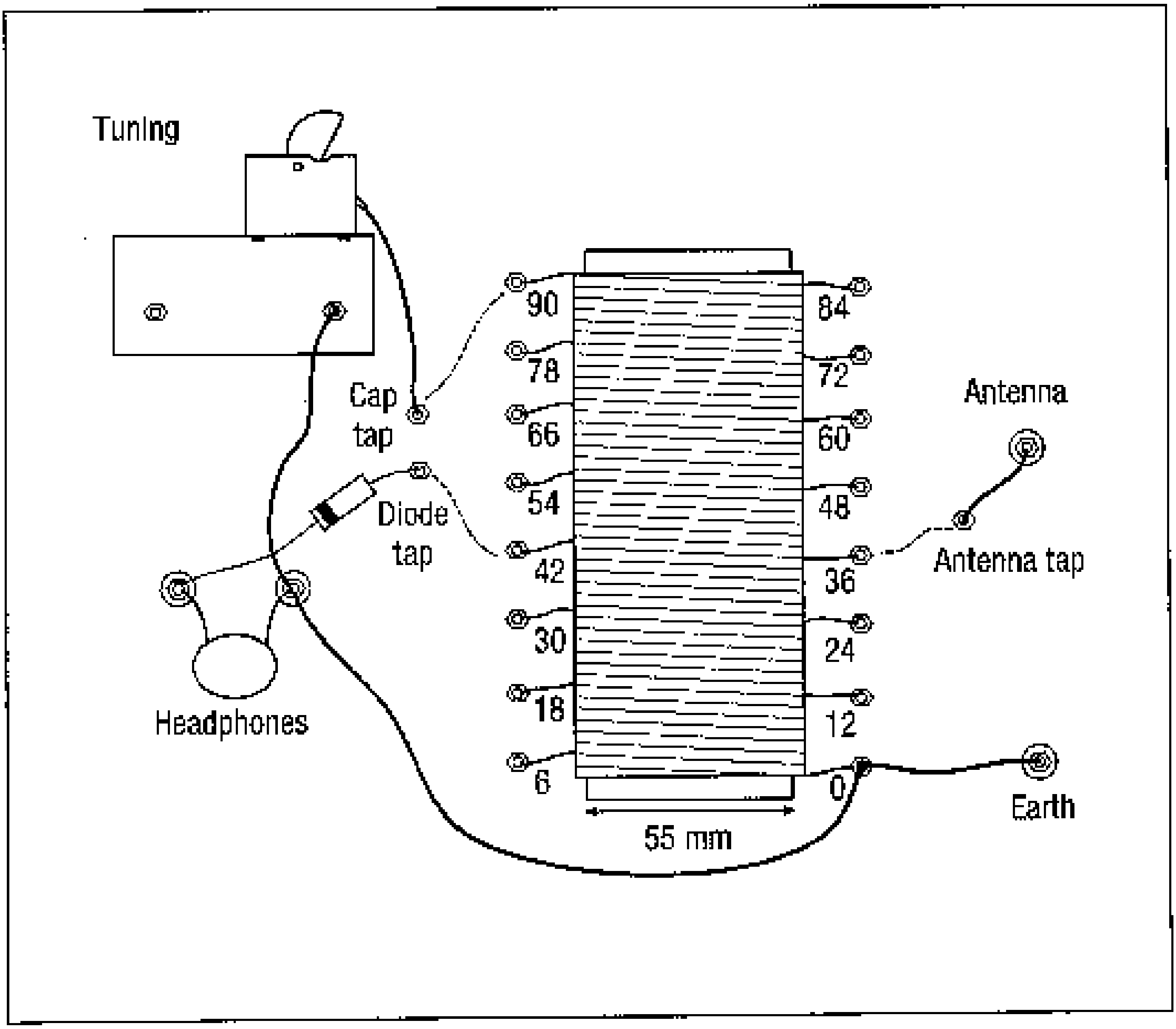


Figure Two: Rear view of front panel.

A simple crystal set for free power radio

Of any electronic project, the crystal set would have to rate as one of the most popular. Many amateurs are on the air today because of their early construction of a crystal set. Most practical electronic books for beginners include at least one crystal set project. Unfortunately, some of these circuits take simplic too far and deliver mediocre performance, often by omitting key components such as the tuning capacitor, or failing to provide coil taps.

Case and handle

Use non-metallic material for the enclosure. The box used in the prototype was originally a speaker bought cheaply at a school fete. The lid (which held the speaker) was removed, and the rest of the box painted. The top carry handle is optional and came from a hardware store.

Construction

Commence construction once all components have been obtained. Plan how the parts will fit behind the front panel. The diagram and pictures above show the arrangement used in the prototype. The coil is fastened with stand-offs and the variable capacitor is screwed to an aluminium L-shaped bracket. 4mm binding posts with banana sockets are used for the antenna and headphone connections, and 2mm micro sockets for the coil tapping points.

Parts List

* 10 â€“ 415 pF variable capacitor x1 (see text)

* 0.001 uF disc ceramic capacitor x1

* 1N60 germanium diode x1

* Vernier dial or drive x1 (optional)

* 2mm micro socket x19

* 2mm micro plug x6

* Banana socket (red) x2

* Banana socket (black) x2

* Insulated wire 20m

* Tinned copper or bell wire 1m

Other items: case and handle; polyethylene chopping board; Coil former â€“ 55mm dia, 150 mm long; screws, nuts, washers and spacers; mounting bracket for variable capacitor.

Conclusion

A crystal set of moderate complexity has been described. It is the minimum required to provide good reception of local stations in urban and rural areas. However numerous refinements to increase sensitivity, selectivity or audio output can be made. These include:

1. Double tuned circuits (with variable coupling between them) to improve selectivity

2. Use of a tuned trap to null out interfering signals

3. Attention to the construction of coils to provide the highest possible Q

4. Addition of an impedance matching network to provide efficient power transfer between the antenna and the tuned circuit

5. Use of a large loop antenna for the coil to allow reception of signals without an external antenna and nulling of unwanted signals

6. Voltage doubler diode detector circuit using two diodes to increase volume

7. Use of DC bias (from a DC voltage applied to the diode) or RF bias (from a locally generated RF signal on the receiving frequency) to improve sensitivity, or, in the case of the latter, to provide CW and SSB reception.

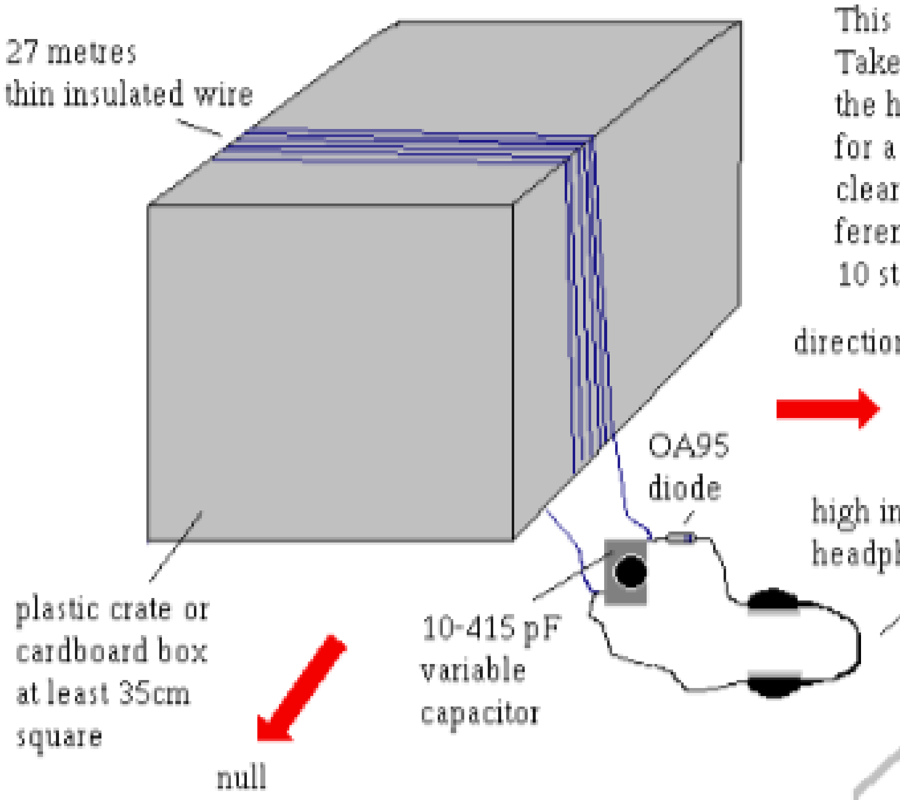
8. Use of a Q multiplier to increase sensitivity and allow CW and SSB reception.

Should you decide to experiment with these changes, it would be desirable to keep this set as a reference and build a second receiver as a test bed for the experiments.

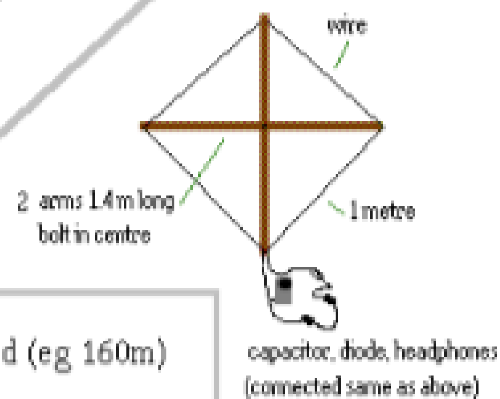
may be true for some crystal set circuits, but not for this one. Making use of its own aerial, this set can be moved from room to room with no trailing aerial and earth wires. With it you'll hear the stronger local signals and be able to null out unwanted transmissions on adjacent frequencies.

Using the radio

This radio is very easy to use. Take it in to a quiet room. Put on the headphones and tune around for a signal. Rotate the box for the clearest reception with no interference. In a large city, as many as 10 stations can be received on this set.



Larger version
(for greater volume - see text)



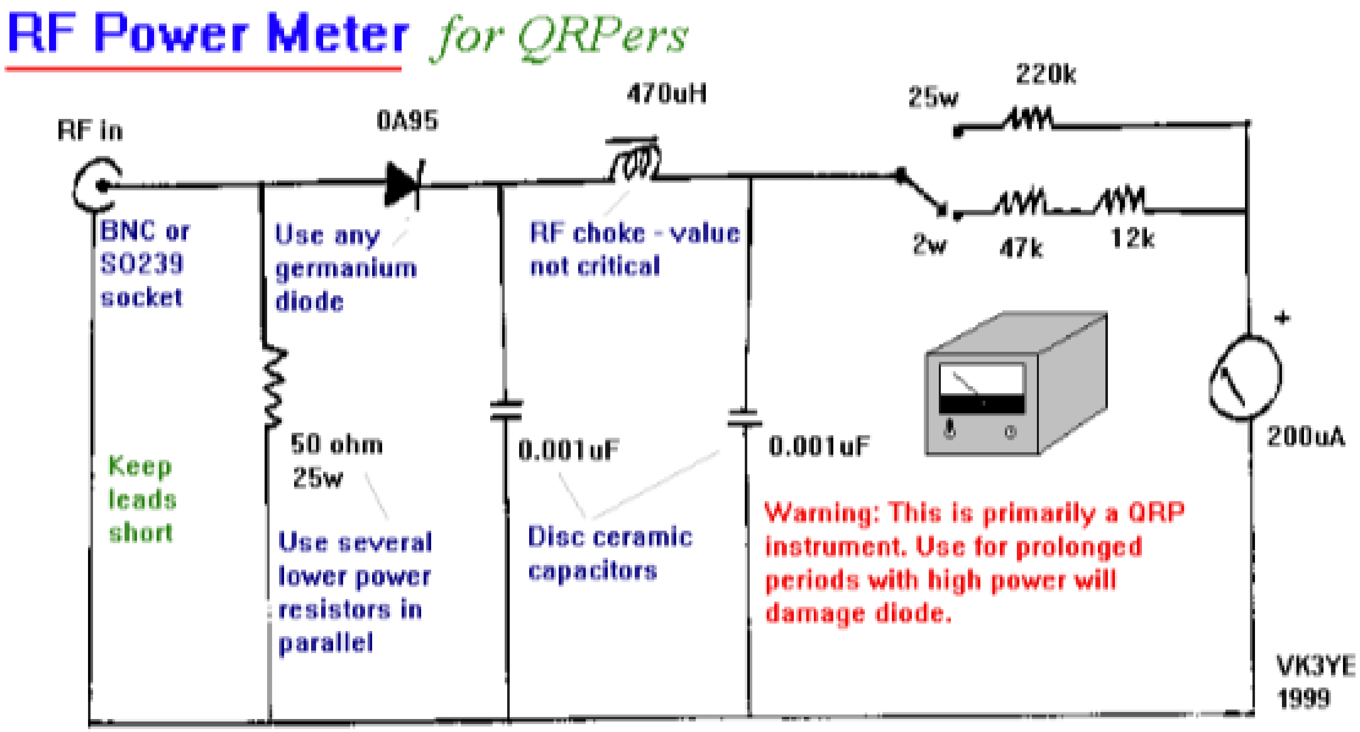
Notes:

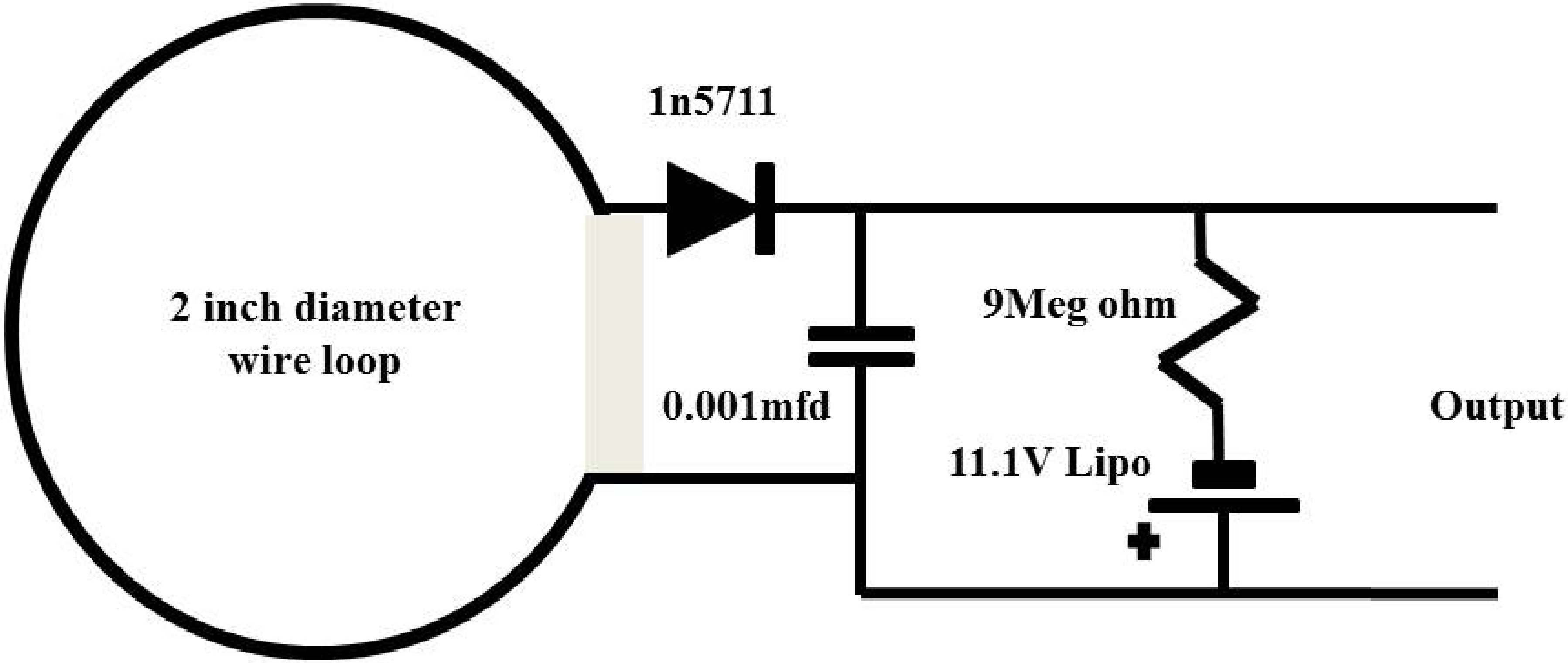
1. The polarity of none of the components used is critical.
2. Removing turns would raise the frequencies able to be covered (eg 160m) while adding turns lowers the frequencies tuned.
3. The value of the variable capacitor is not critical. However a smaller type would reduce coverage of lower frequencies.
4. The headphones used must be high impedance. If you only have low impedance phones, use a transformer. Even a power transformer with a mains voltage primary and a low voltage secondary (3-12 volts) will work if the primary is connected to the diode side of the circuit.
5. The diode used is any germanium type - it is not critical. IN34A, OA90, OA91 or OA95 are all suitable. Germanium types can usually be recognised by their clear glass envelope and two bands near one end.
6. The type of insulated wire used for the coil is not critical. Spacing of the turns is also not critical.
7. The size of the box or crate is not critical. However, a bigger coil gives louder signals. An experiment with winding the 27 metres of wire on a cross made of two 1.4 metre long poles was successful as it gave much more sound in the headphones. See drawing above.

Boost AM radio reception

This project can also be used to boost the performance of AM transistor radios. Build as per instructions but omit the diode and headphones. To use, put the radio inside the loop so the turns on the ferrite rod inside the set are parallel with the turns on the box. Adjust V. capacitor and turn box for best reception.

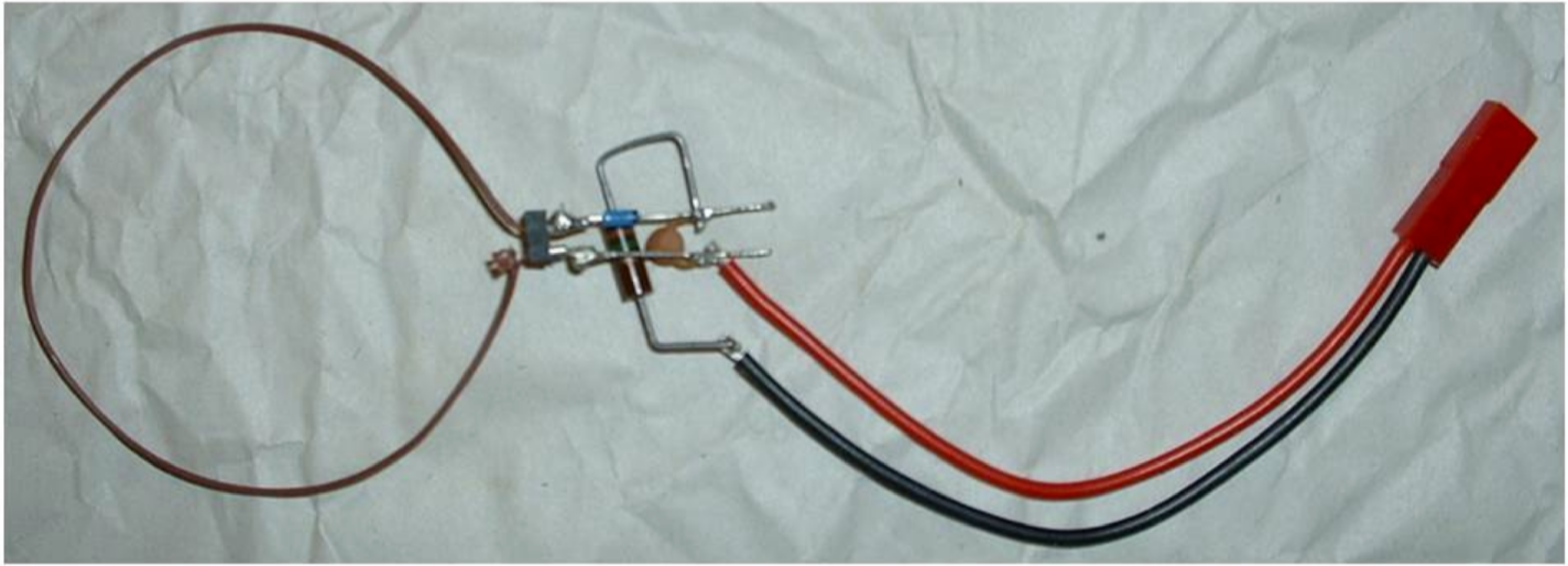
A QRP RF power meter

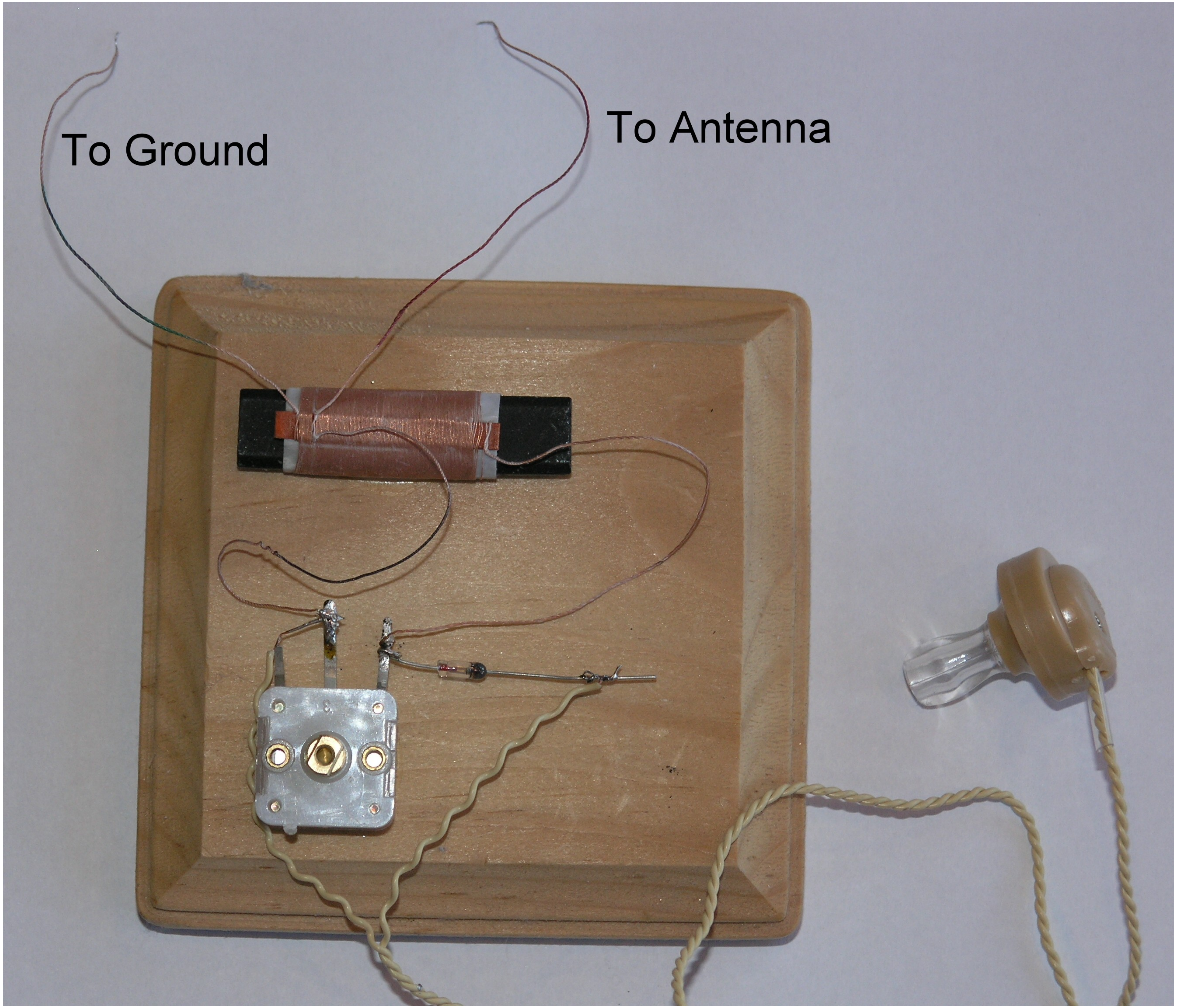


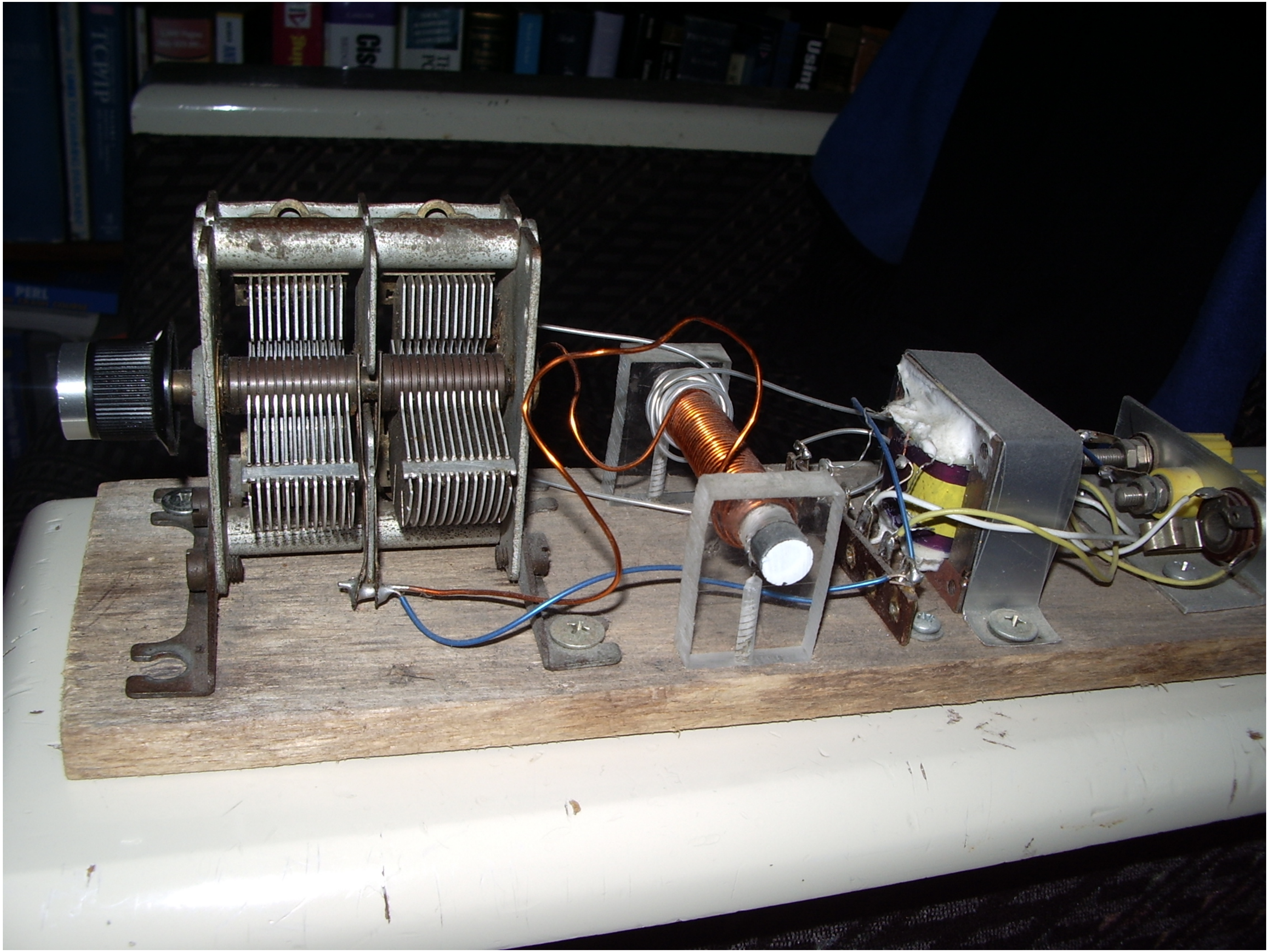


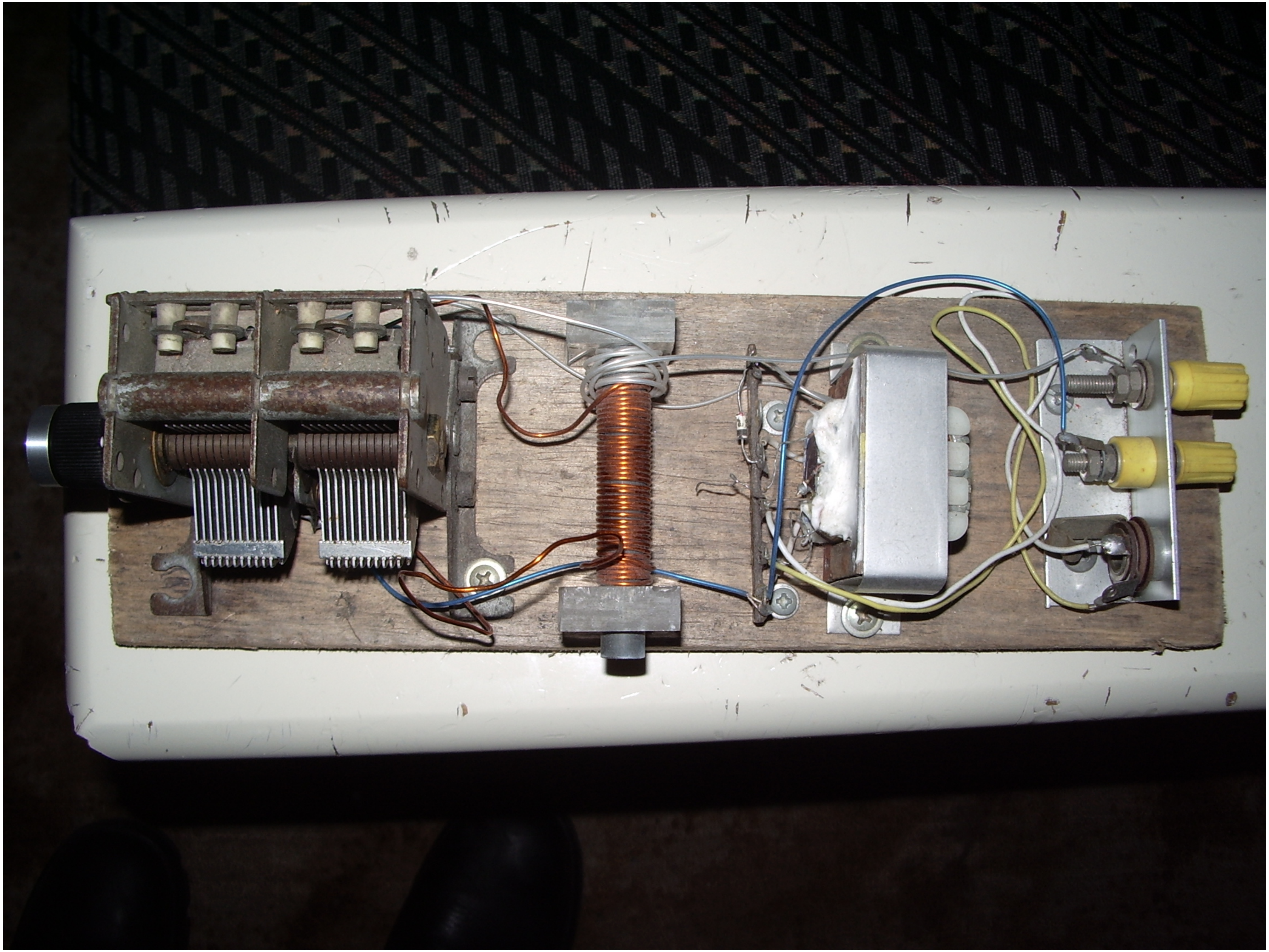
A more sensitive rf field strength meter (especially for 2.4Ghz)
by Flying-llama (extending dave1993's design)

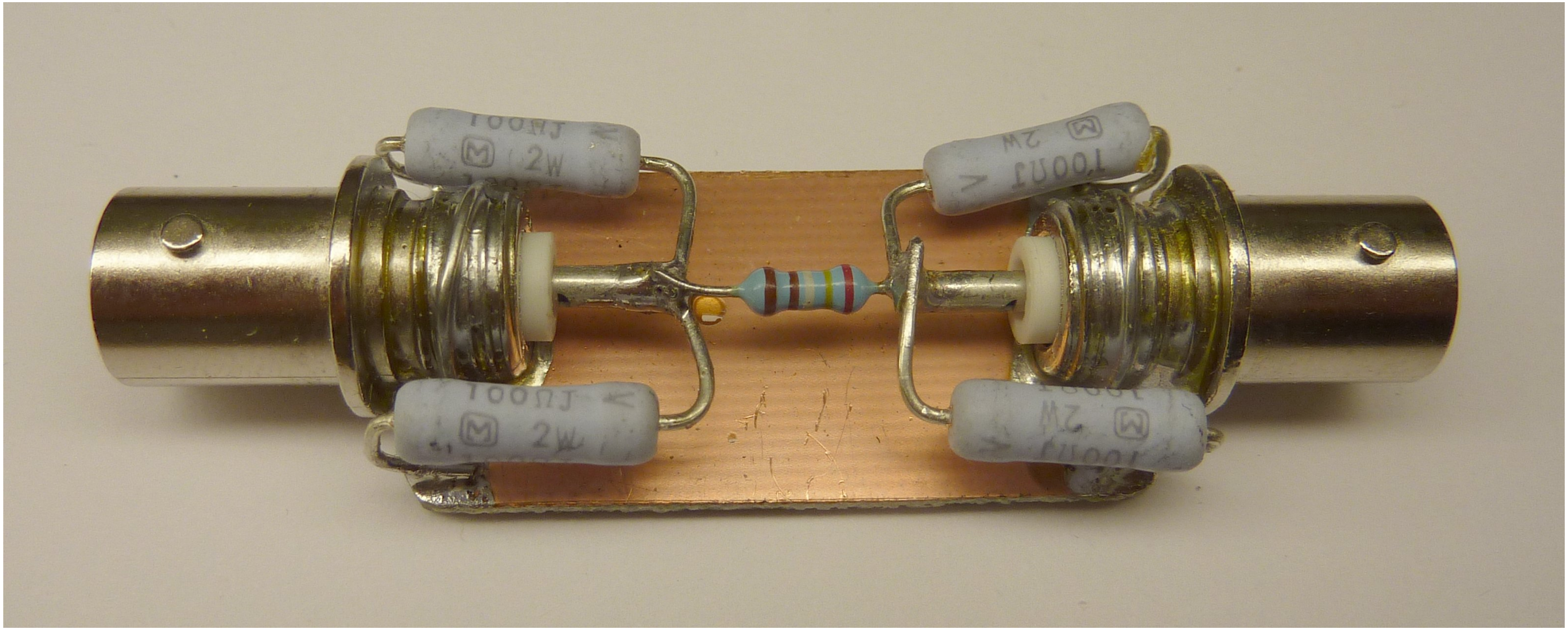
WARNING: Output can range from about negative 0.15V (little or no signal detected) to positive volts (large signal detected)

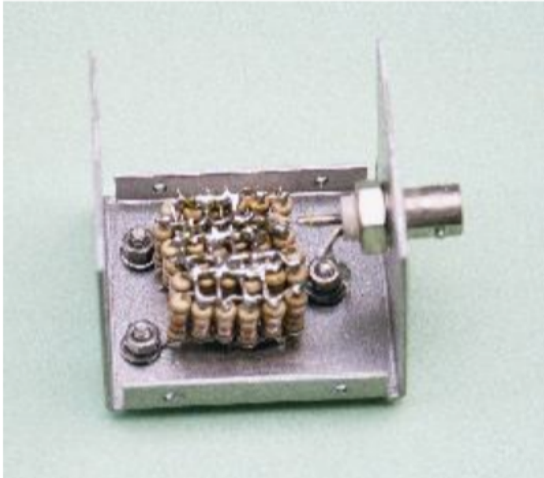



To Ground
To Antenna






2W



Click on the image above to see a larger, more readable image

As you can see from the image above, I arranged six resistors in a row, routing the lead of the first to the second, and soldering it, and the second to the thrird, etc... on both ends. I ended up with 6 rows of 6 resistors, and soldered those in parallel, too. I left 3 leads on one side, which I formed into a "ring" terminal, which (in conjunction with 3 screws and 3 nuts) served to mount the resistor assembly to the inside of the enclosure. The other side gets wired to the center conductor of the BNC jack. Grabbing my trusty ohmmeter, I measured 49.7-ohms (plenty close-enough).

How well did it work? Well, on the HF bands, with 25-watts of RF, I read a 1:1 SWR, even on 10-meters (30-MHz). On 2-meters (146 MHz), it reads about 1.3:1.

Don't be afraid to substitute different value resistors. Using the right number of EQUAL-VALUE resistors, you should be able to build a usable dummy load at any impedance from 25 ohms to 1000 ohms, and 5 watts to 100 watts (or more). Keep the peak voltages to less than 200 volts (Voltage = square-root of Power * Resistance). Use a shielded enclosure, possibly ventilated with holes to release heat. Be aware of heat dissipation (ever touch a 25-watt bulb?), and plan for it. The amount of power applied must never exceed the aggregate ratings of the resistors, and probably should be kept to something much less, depending on your enclosure and how well heat is released.

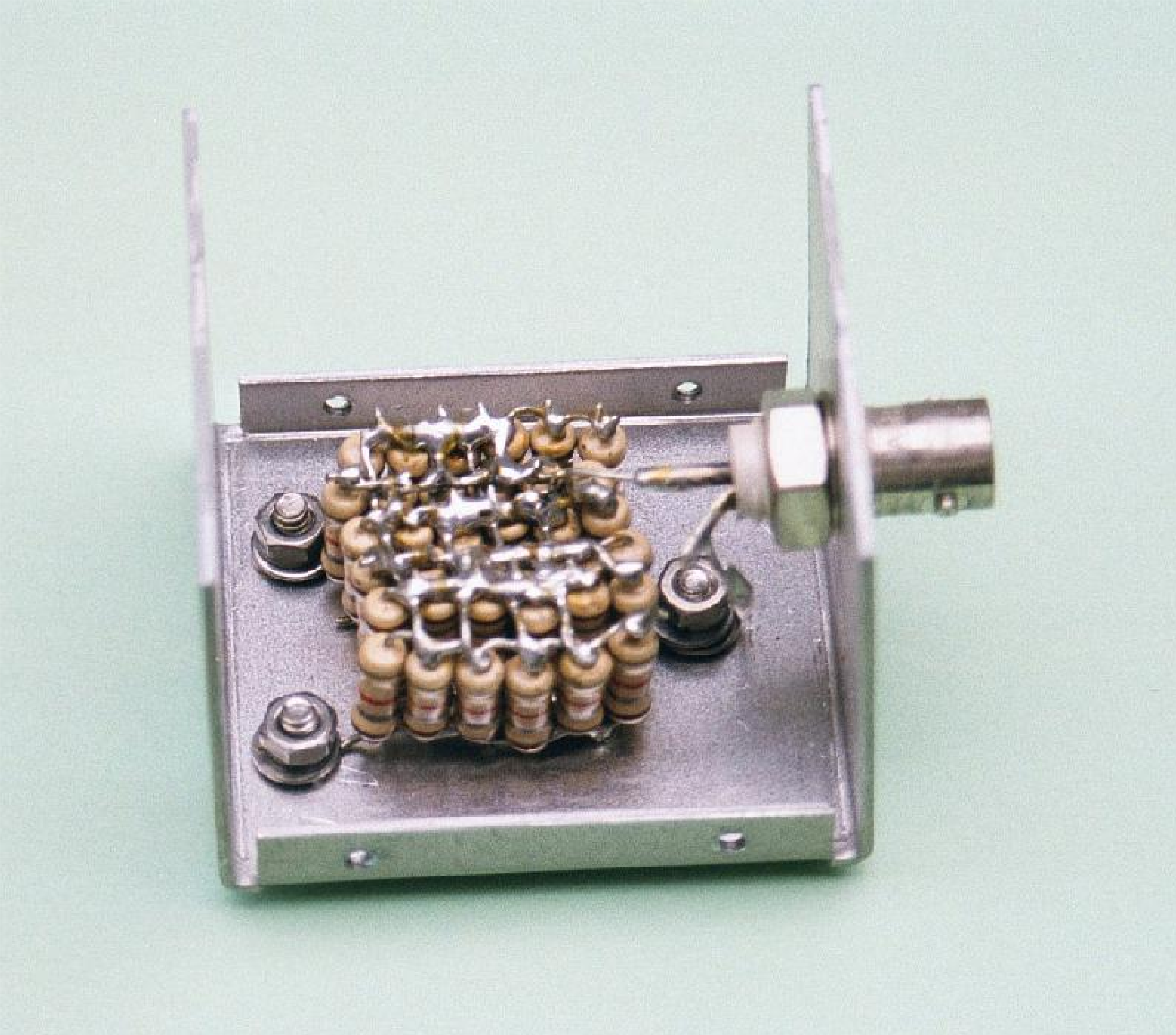


Figure 1 Three constructions for magnetic field probes

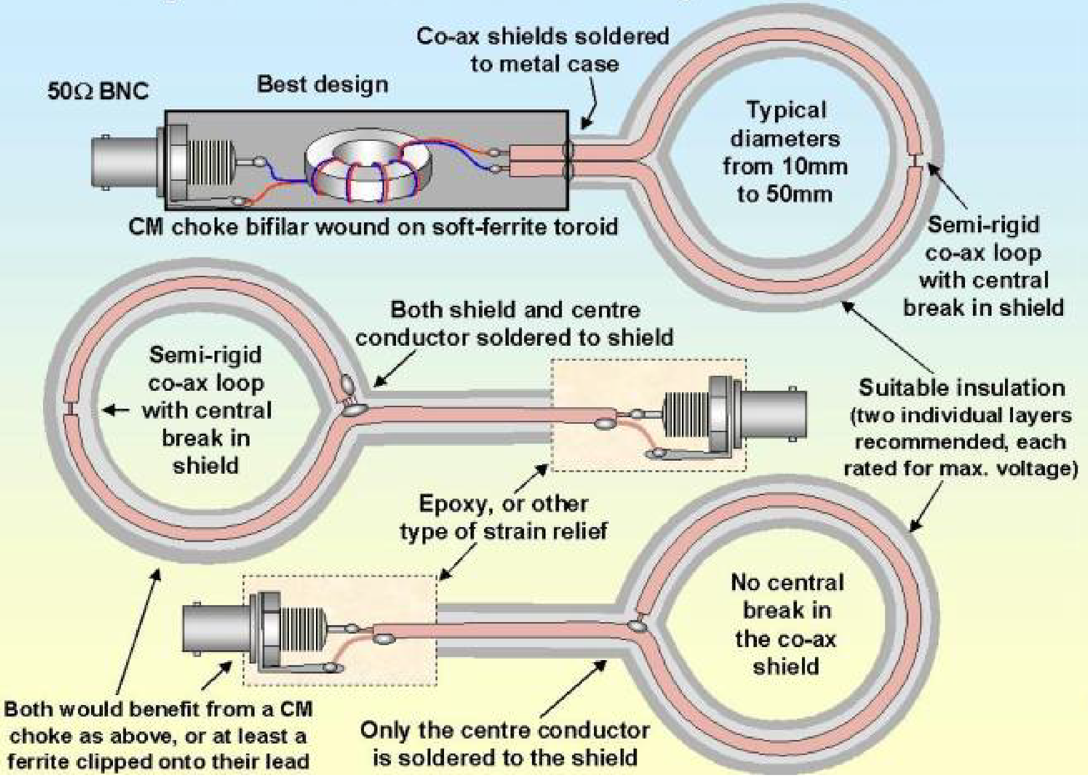
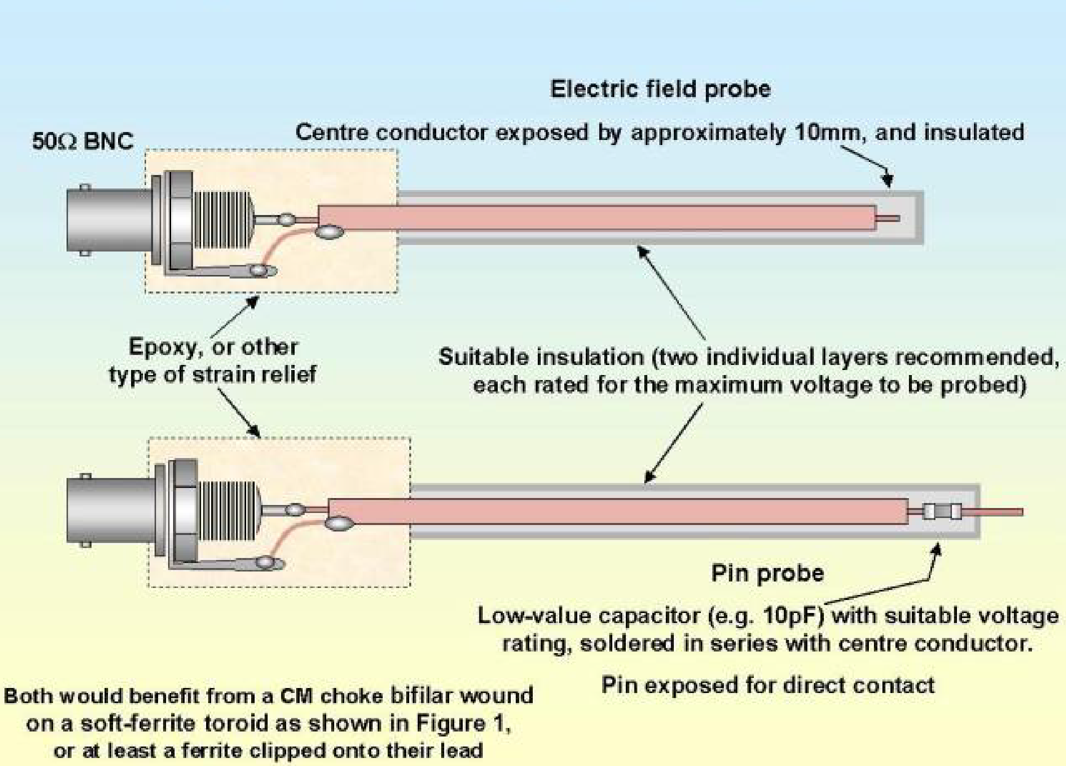
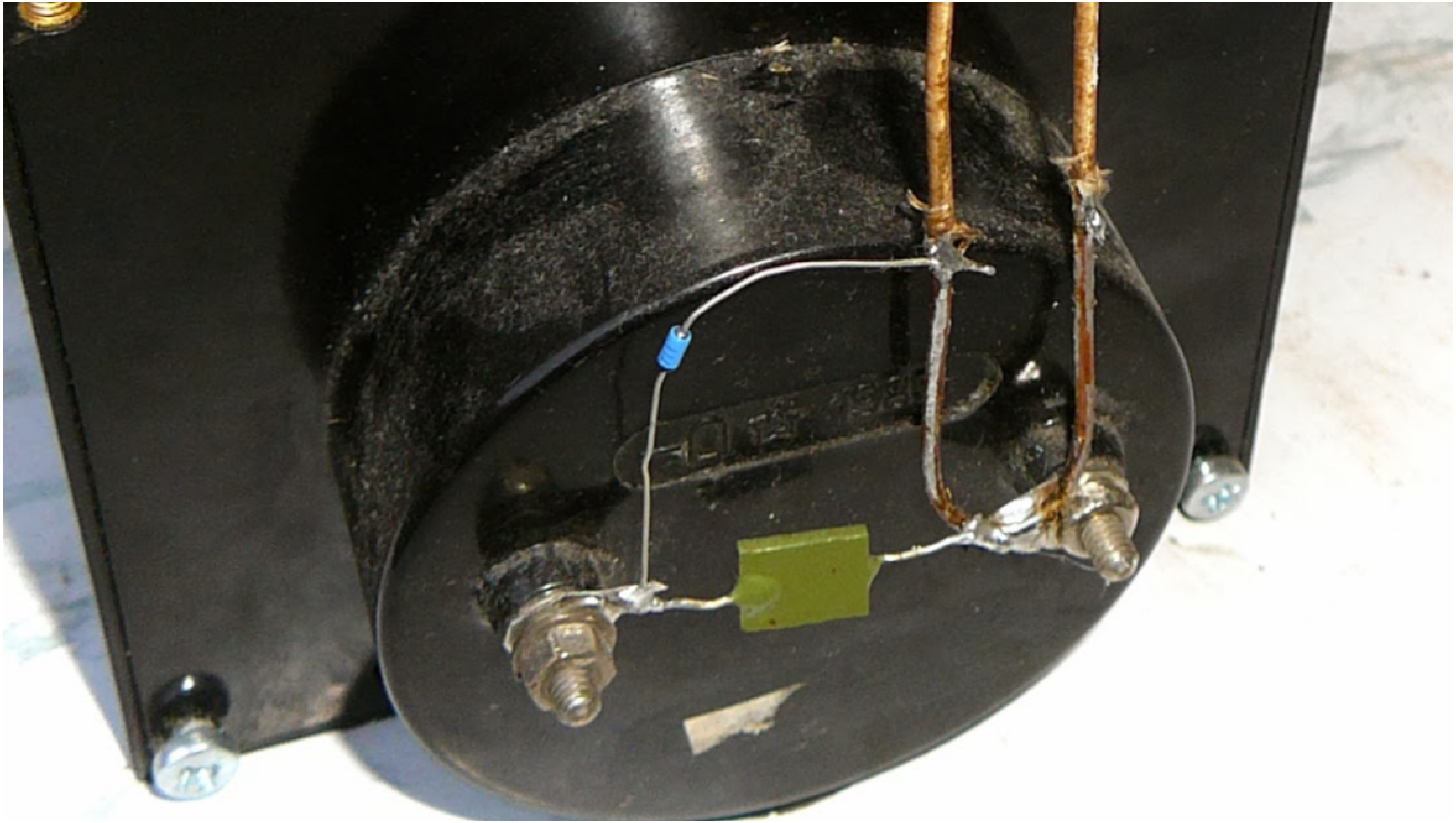


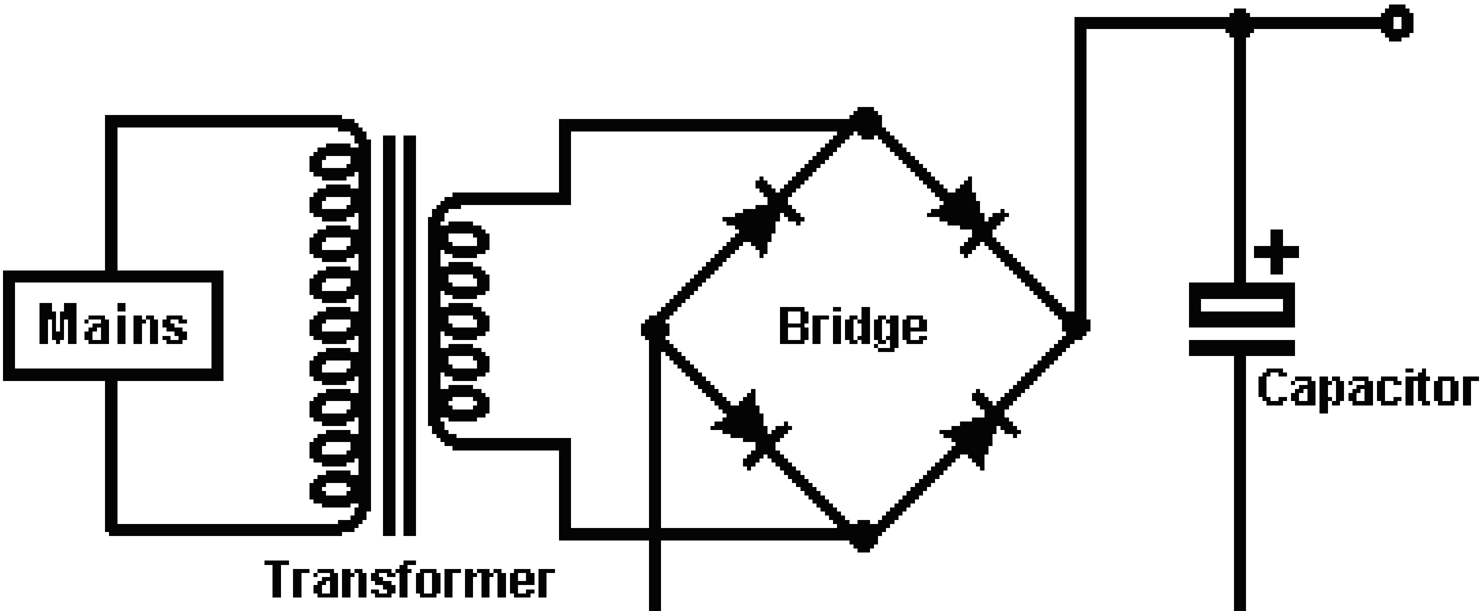
Figure 2 An electric field probe, and a pin probe



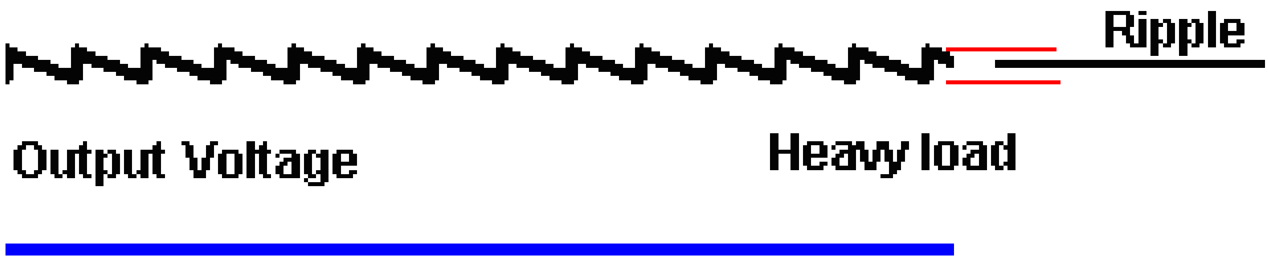

μA

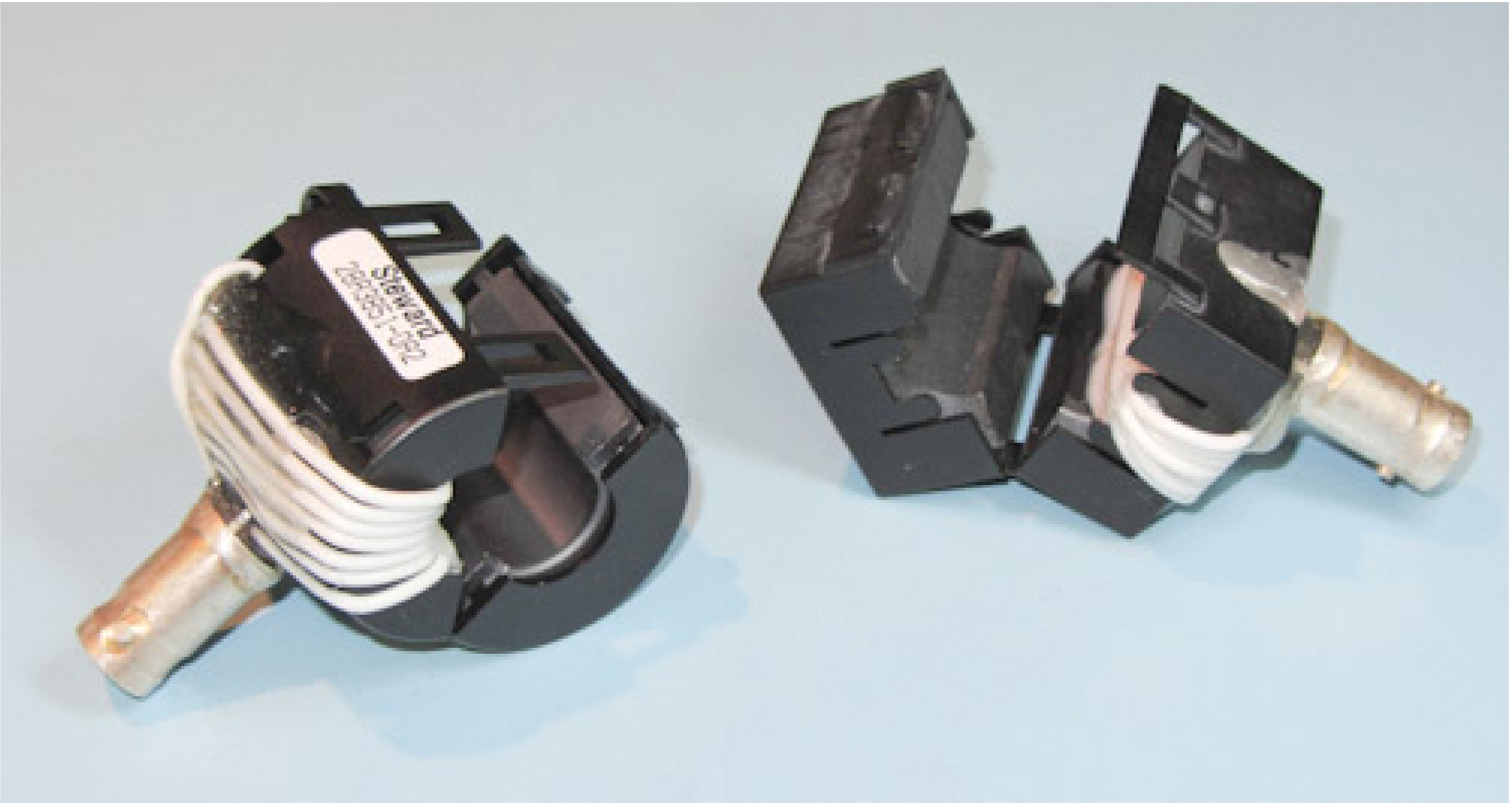


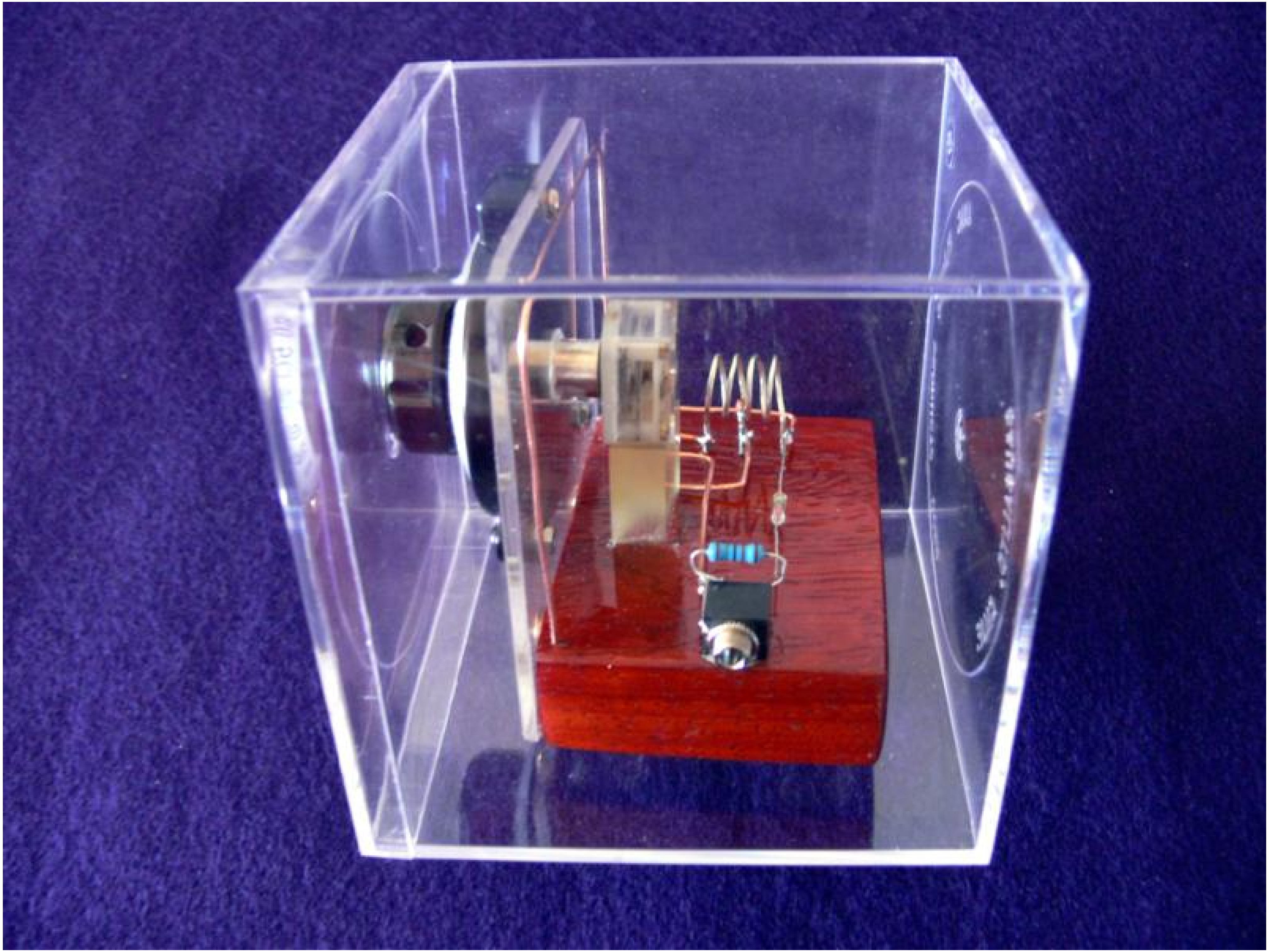

0
20
40
60
80
100
μA

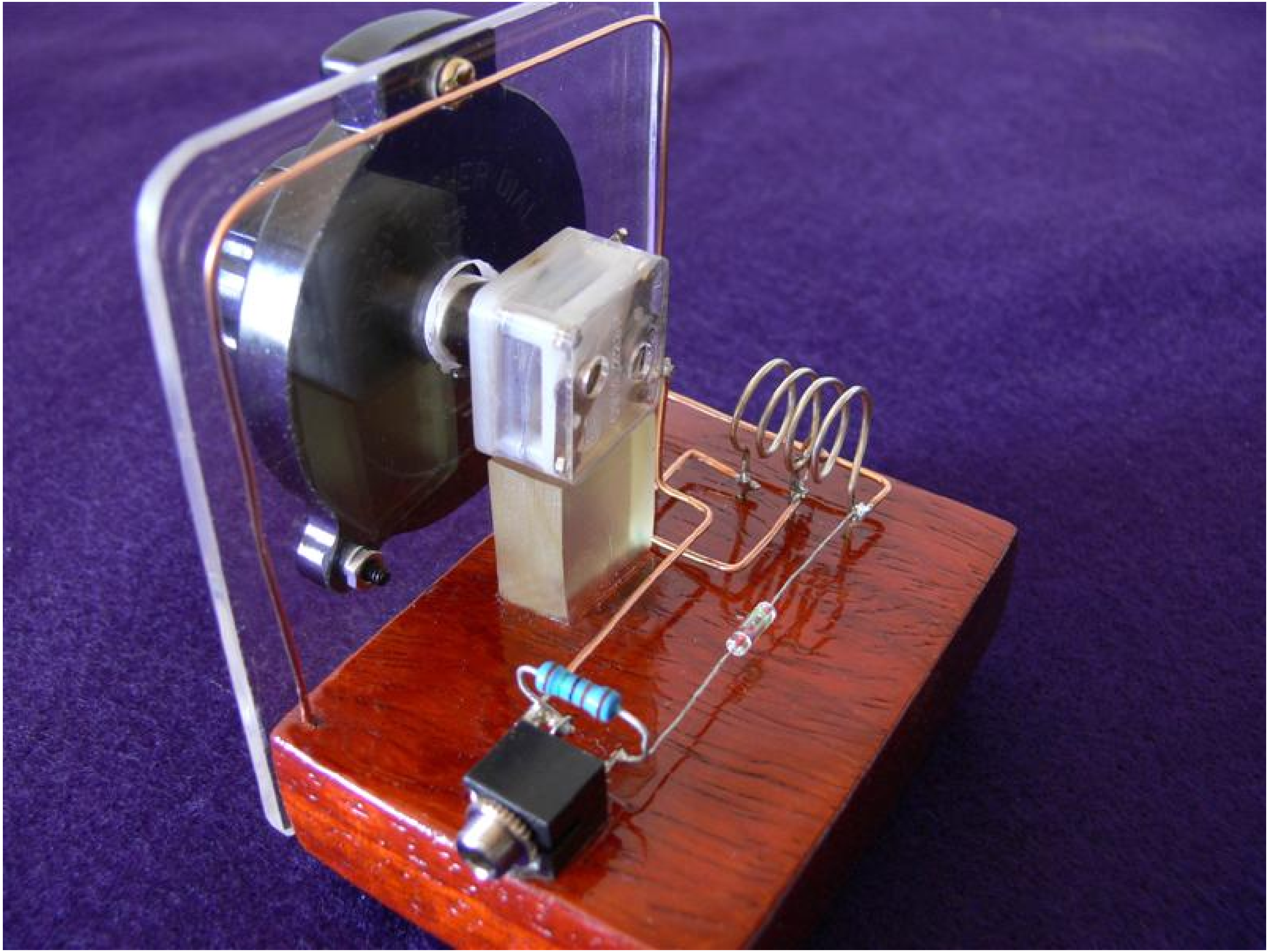


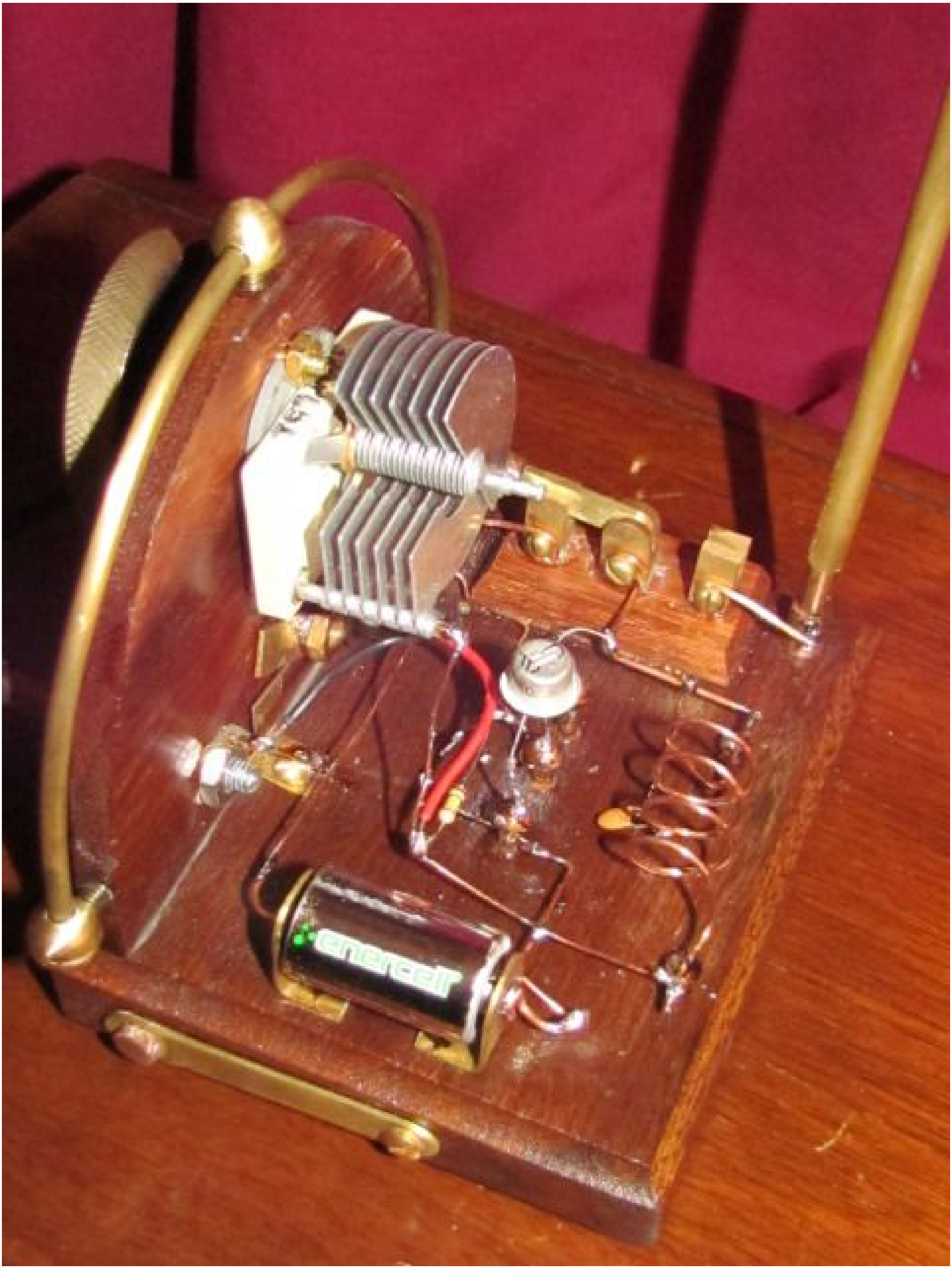
Power Supply Unit

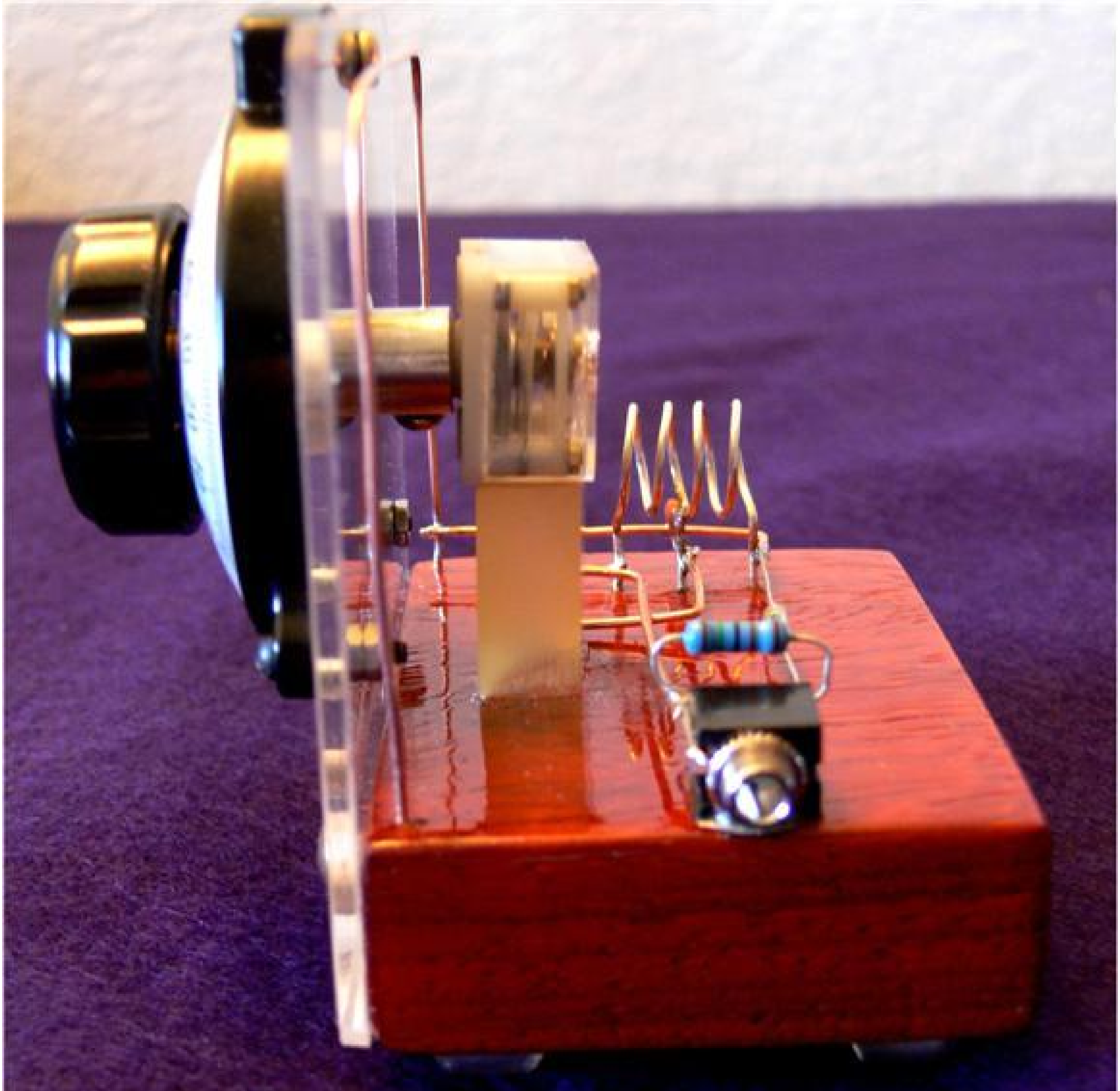


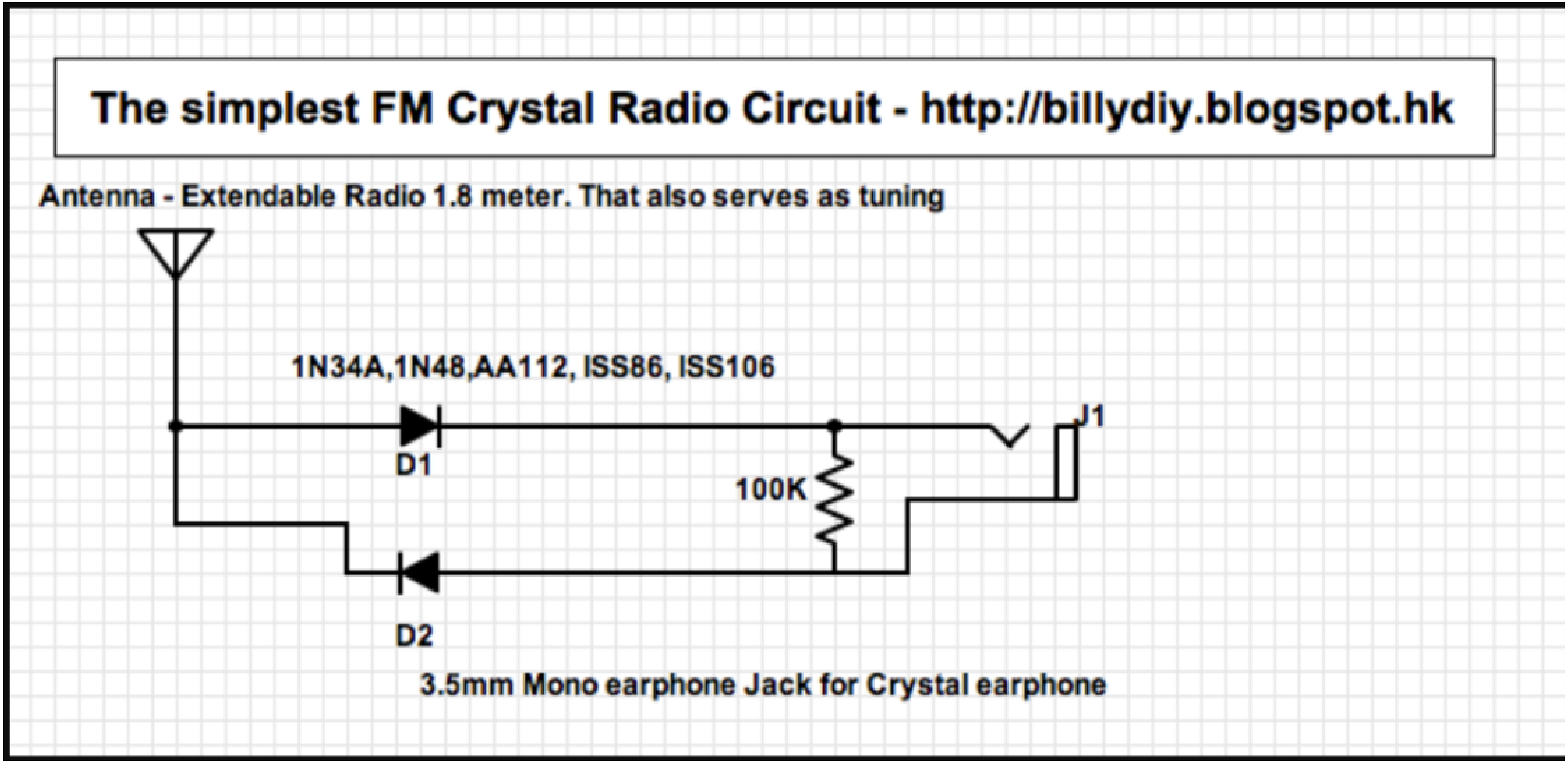


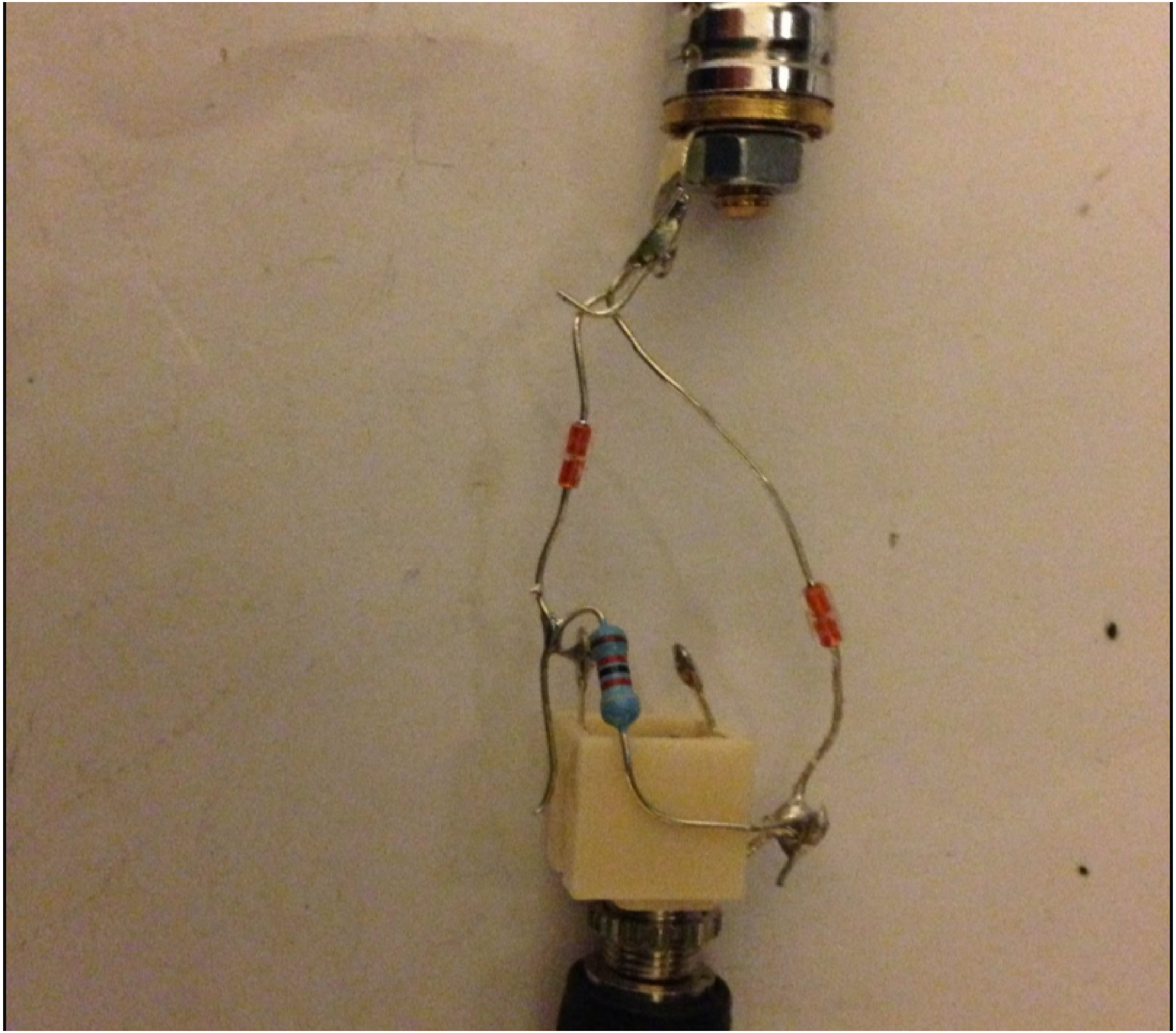


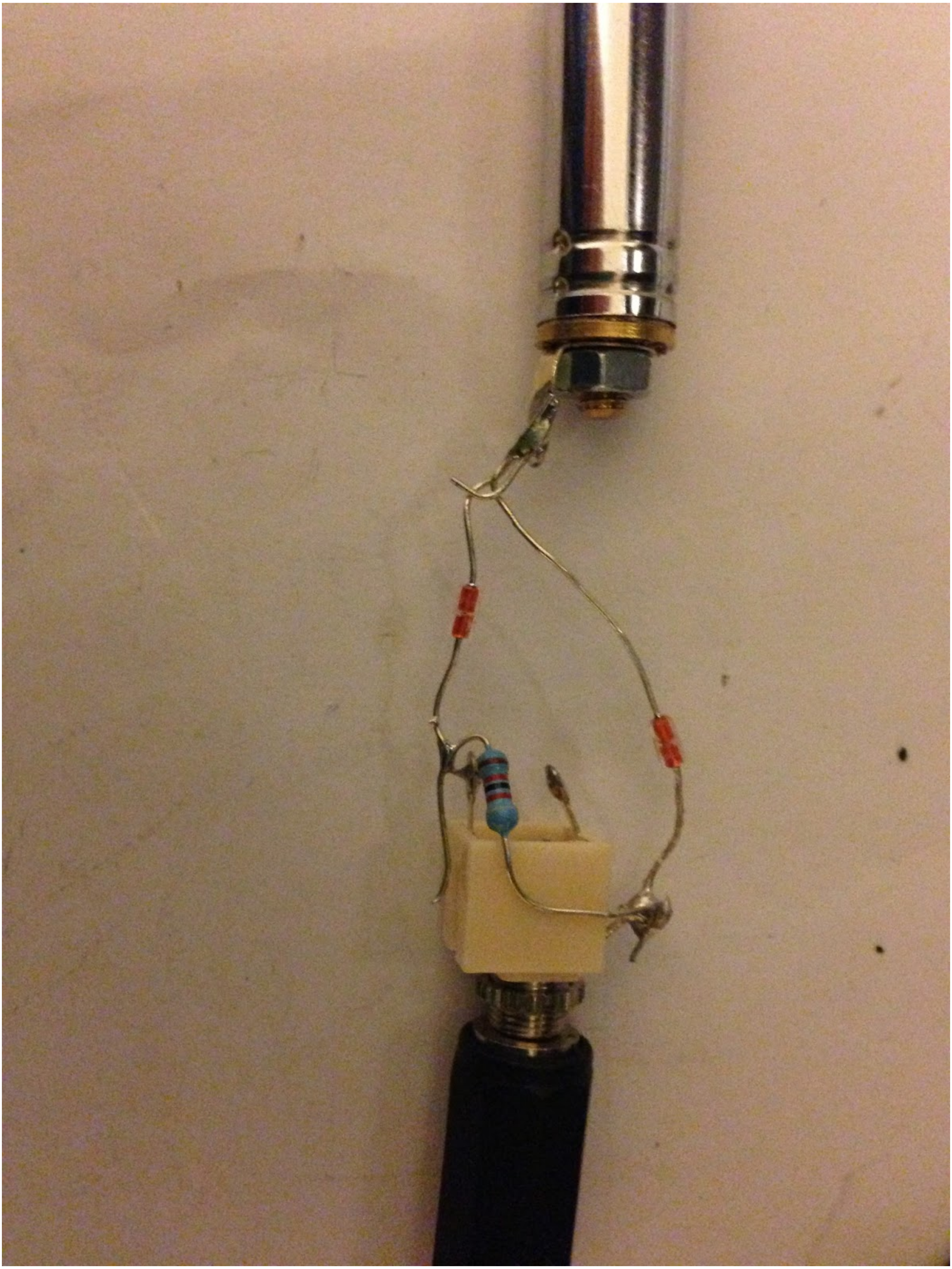


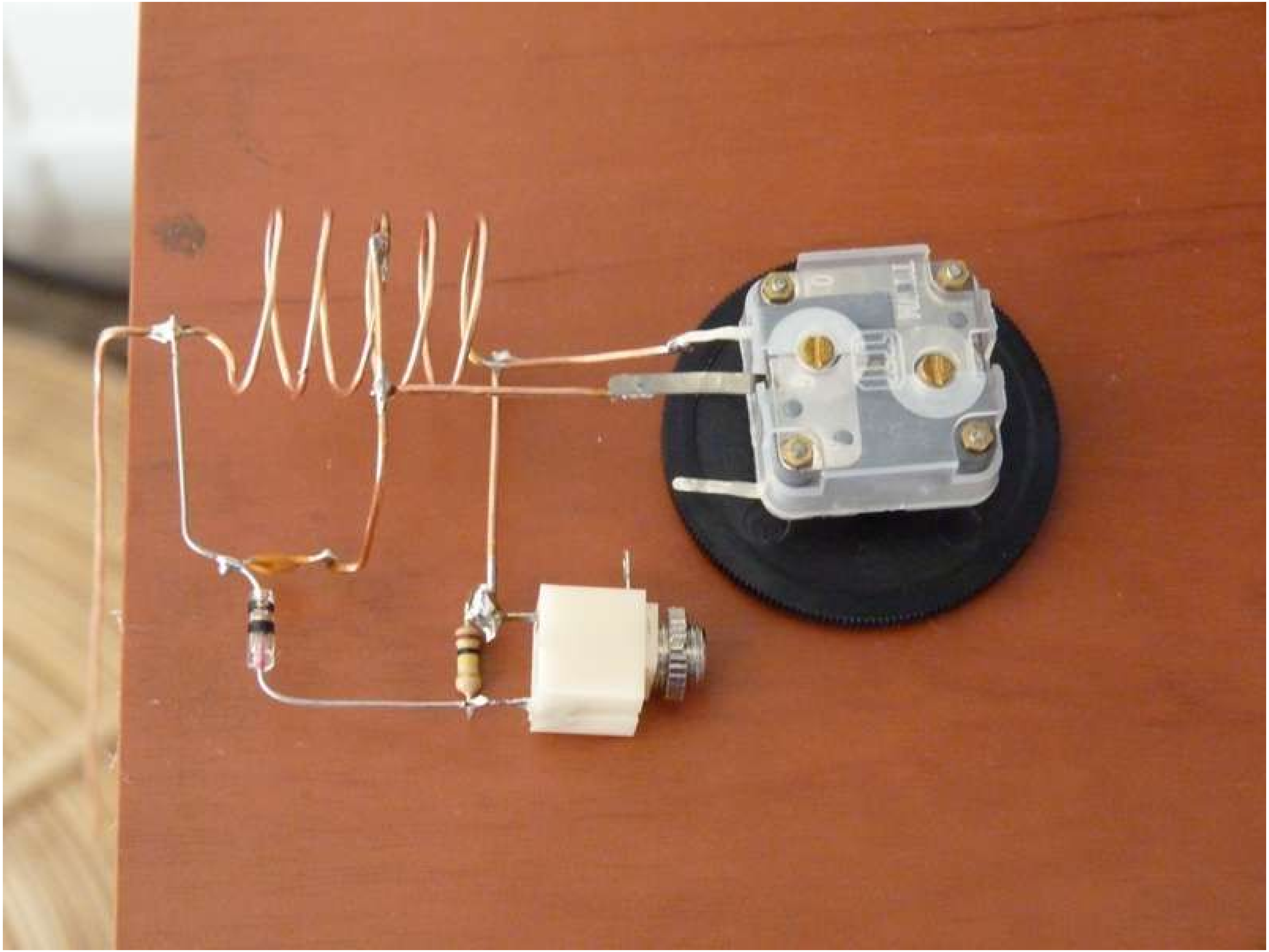




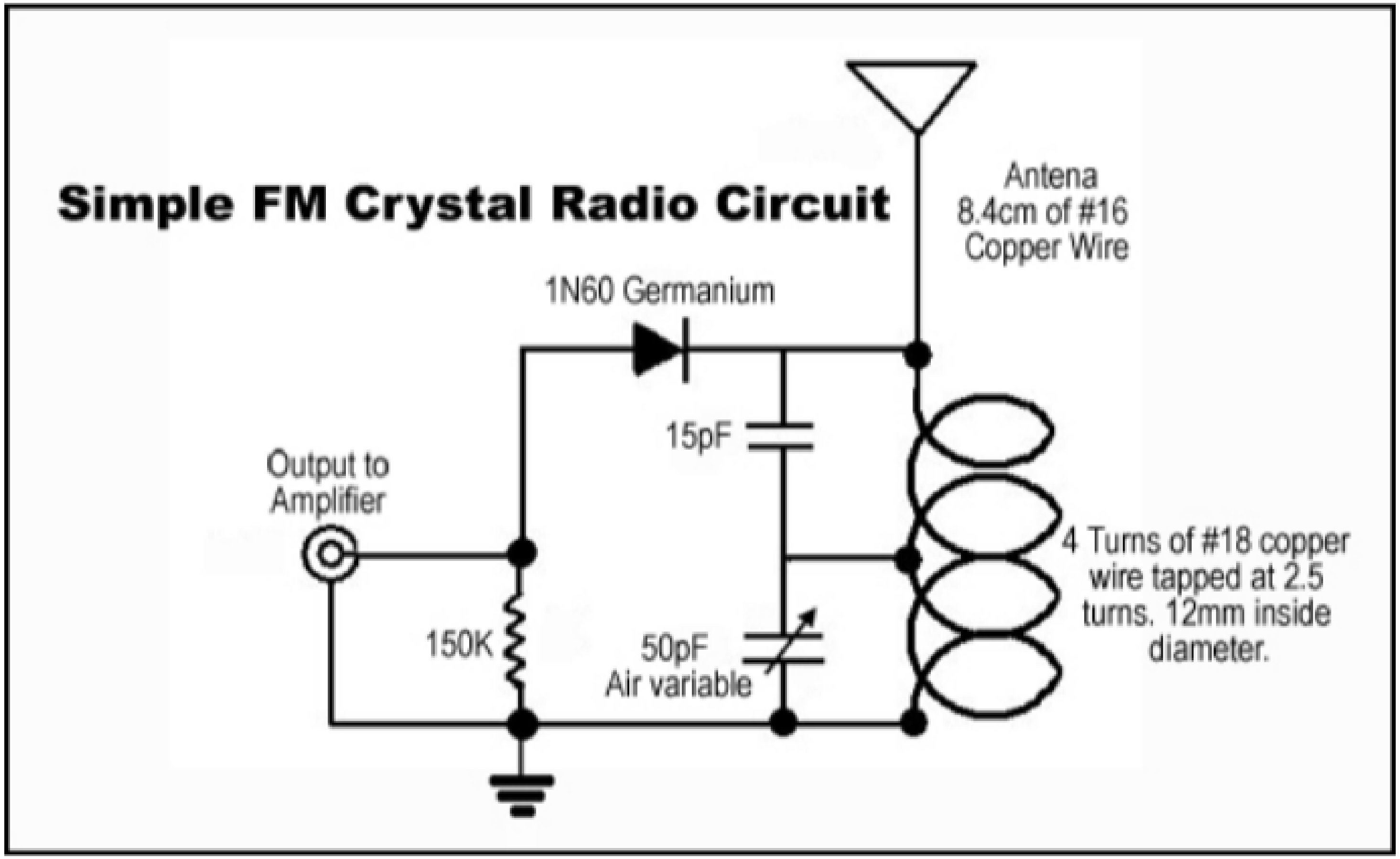

The simplest FM Crystal Radio Circuit - http://billydiy.blogspot.hk
Antenna - Extendable Radio 1.8 meter. That also serves as tuning
1N34A,1N48,AA112, ISS86, ISS106
D1
J1
100K
D2
3.5mm Mono earphone Jack for Crystal earphone







FM Crystal Radio Circuit

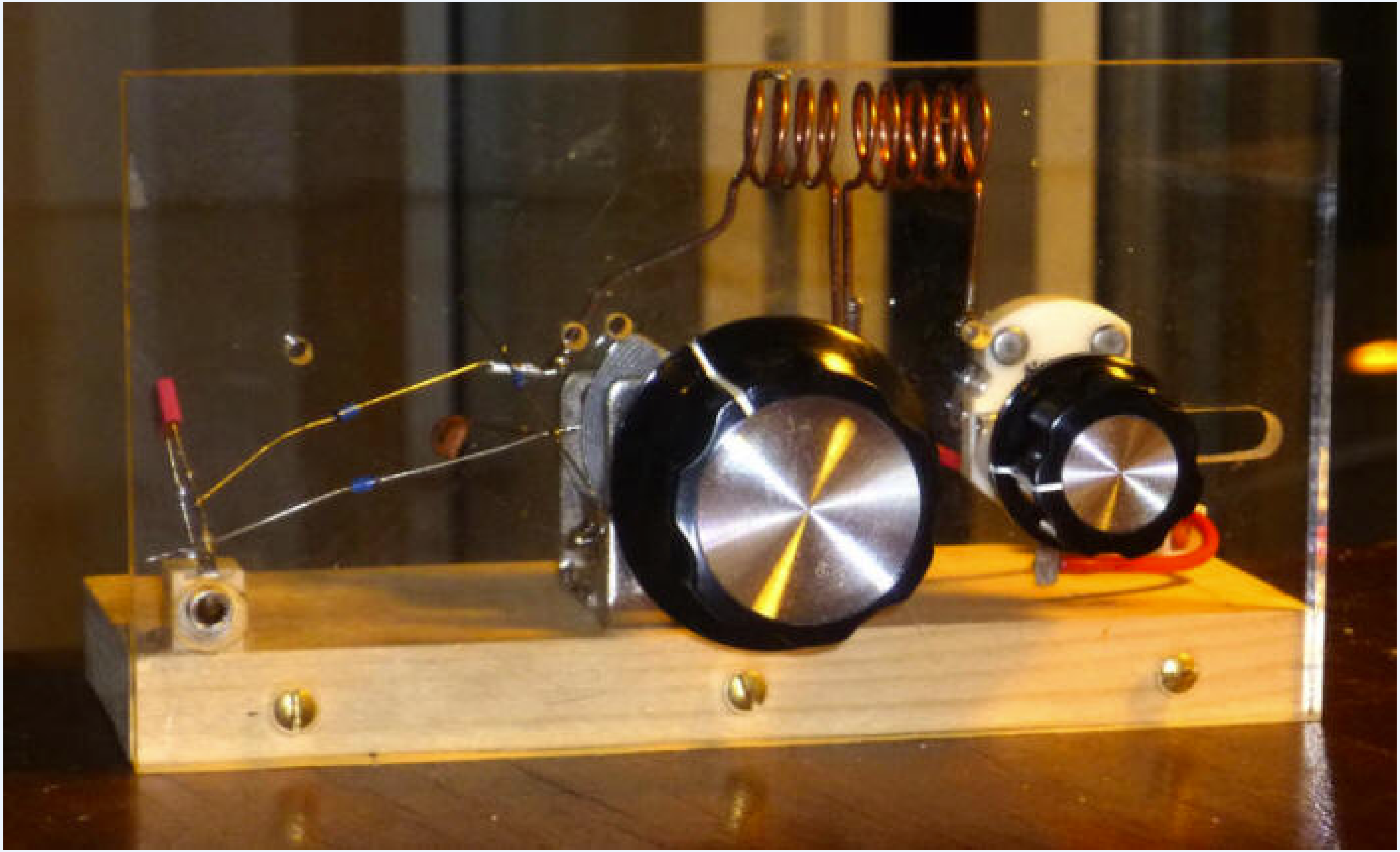


Parts List (some of these parts you can buy from our online store):

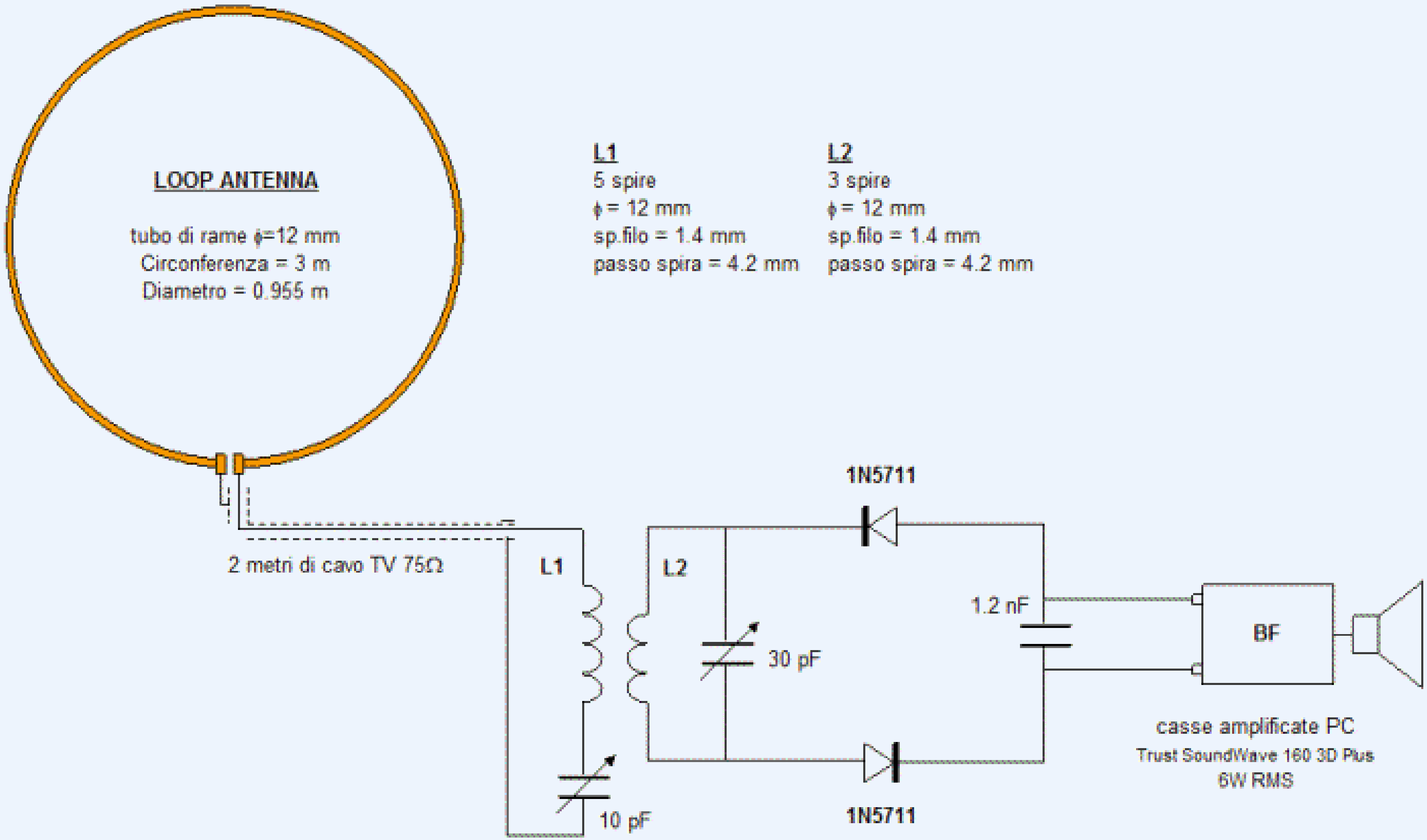
- 1N60 Germanium Diode
- 15pF Ceramic Capacitor
- 50pF Variable Capacitor
- 150K Ohm Resistor
- #16 & #18 Copper wires

Ricevitore a cristallo per FM

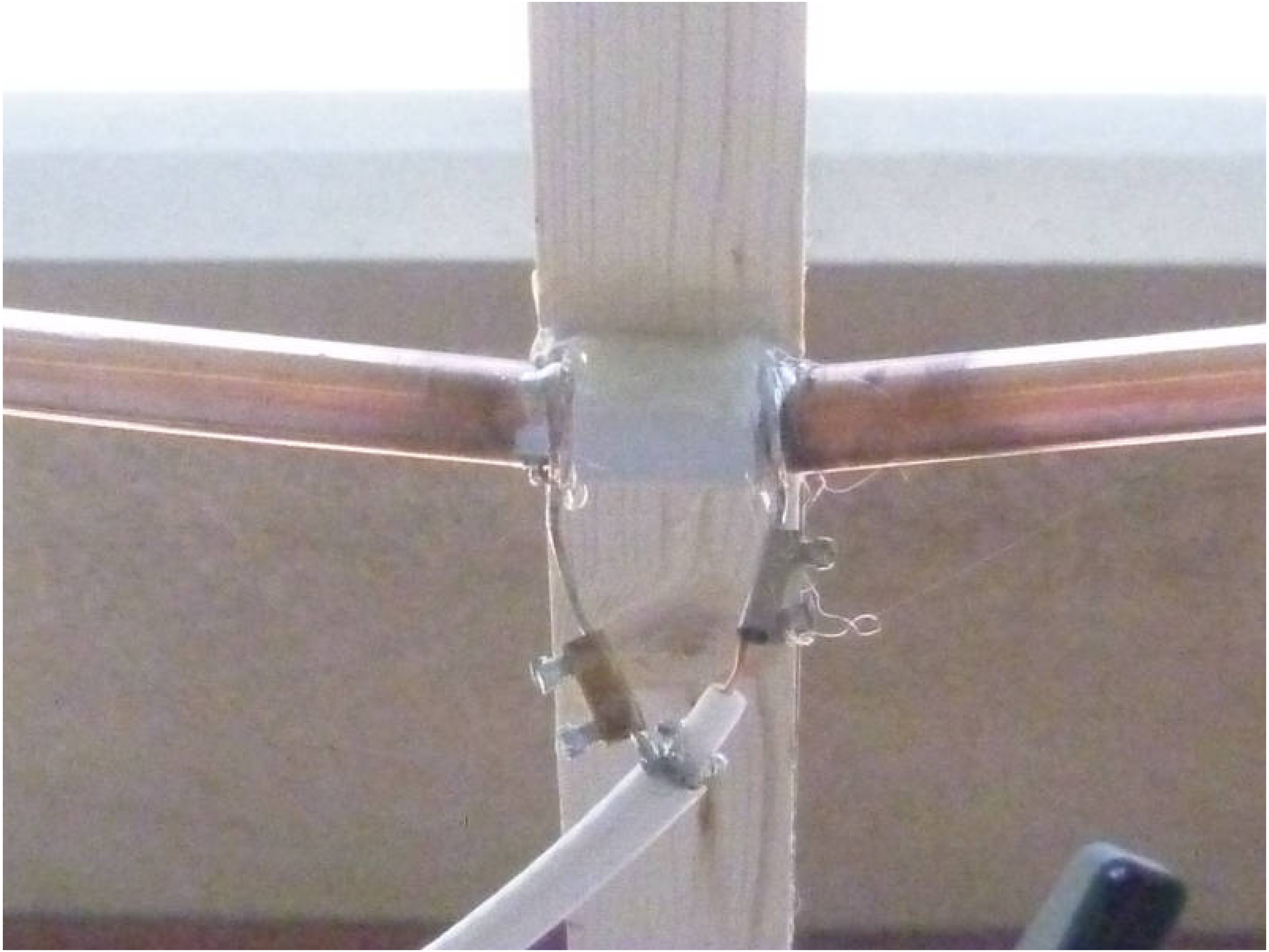
Un progetto di Giacomo Cavuoti

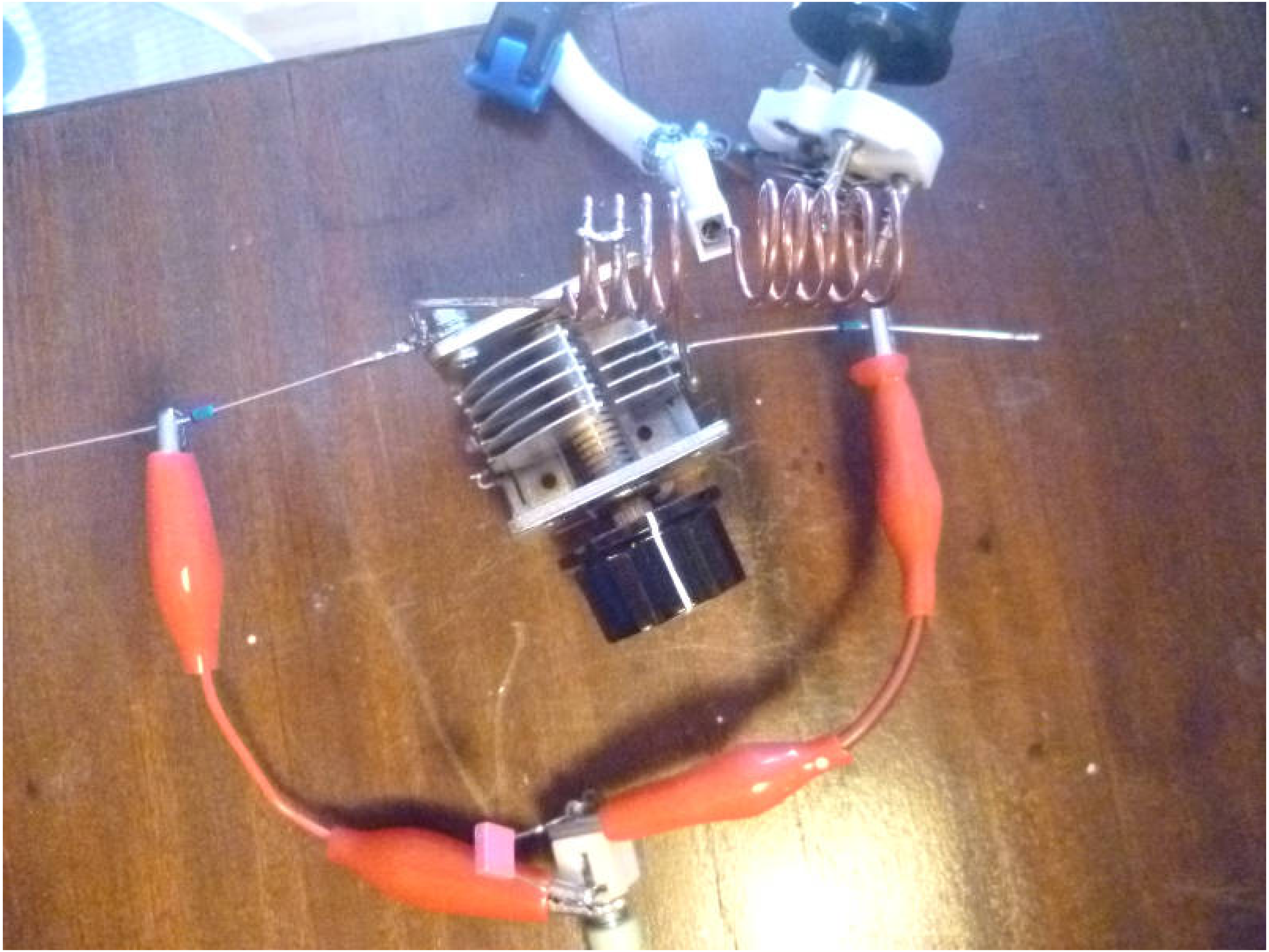


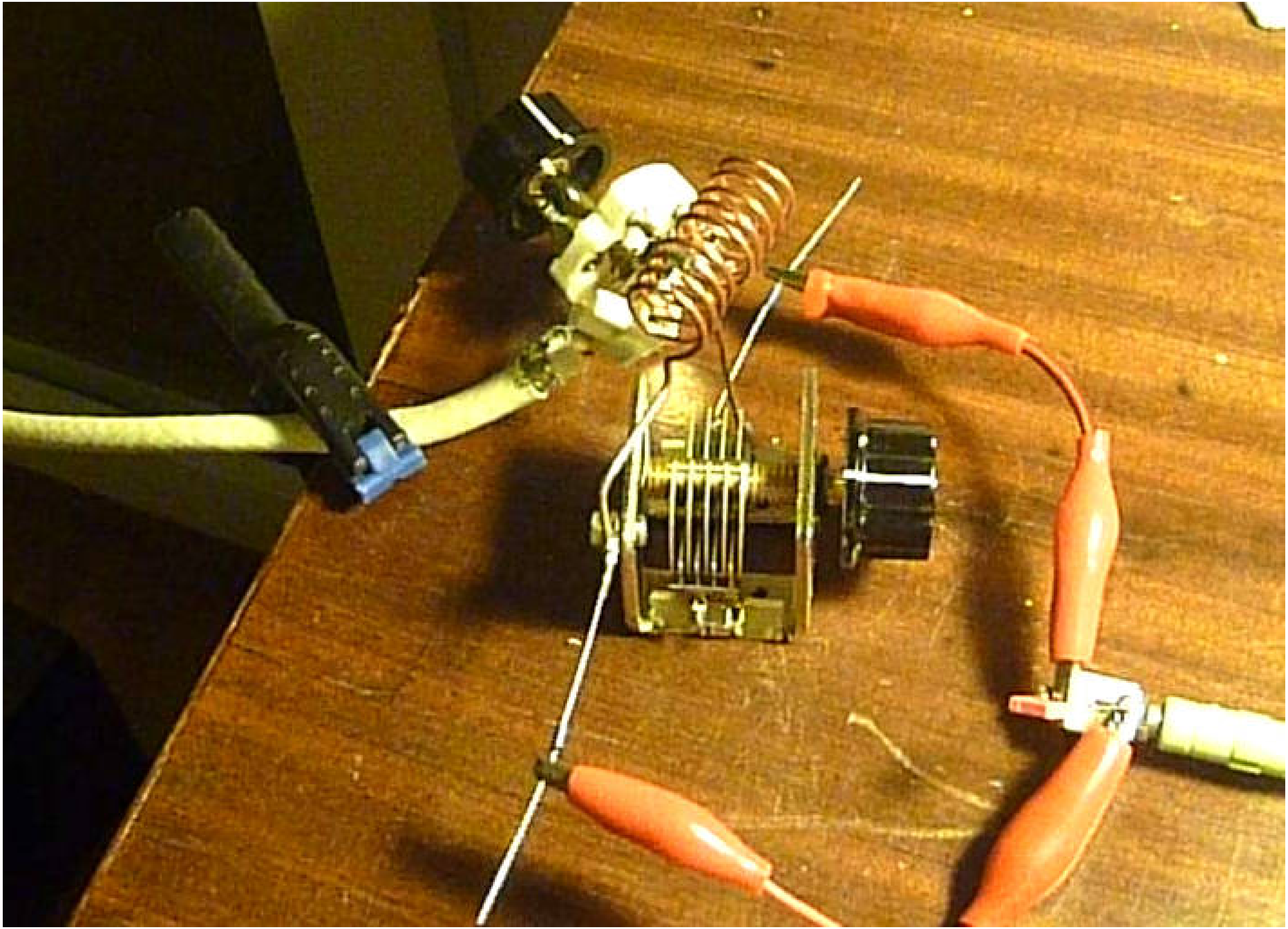
Seguendo l'invito di Leonardo ho realizzato questo semplice ricevitore a cristallo per FM (fare clic sullo schema qua sotto per vederlo ingrandito).

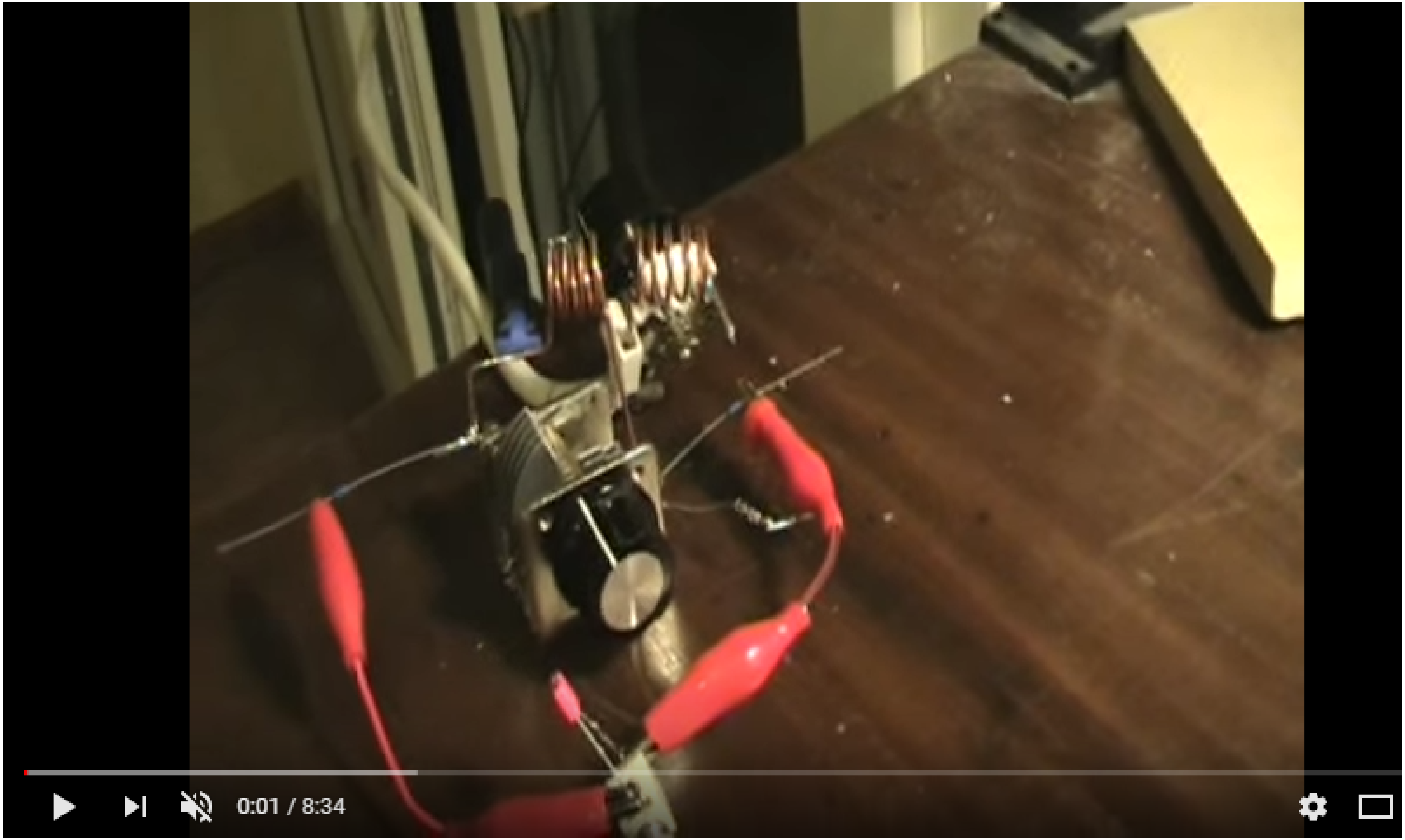


The receiver is "powered" by a full wave loop antenna consisting of a single circular coil made of 3 meters of copper pipe for hydraulic systems (measured inductance of about 3 uH). The support is a simple 2-meter long fir-wood strip, 3 cm wide and 1 cm thick, to which the copper rim has been fixed with insulating tape. Another solution to realize the loop antenna in a simple and instantaneous way is to use an aluminum strip 2 mm thick and 2 cm wide. The detectors are two *Schottky* diodes type 1N5711, particularly suitable for VHF thanks to the low capacity (about 2pF). They are currently in production and therefore easy to find. The receiver was tested in a "stiff" situation with the antenna exposed in a recessed balcony (3 x 1.6 meters) on the fourth floor of a 6-storey reinforced concrete building surrounded by other buildings constructed of reinforced concrete walls. As you can see and hear from the two videos I uploaded on Youtube:



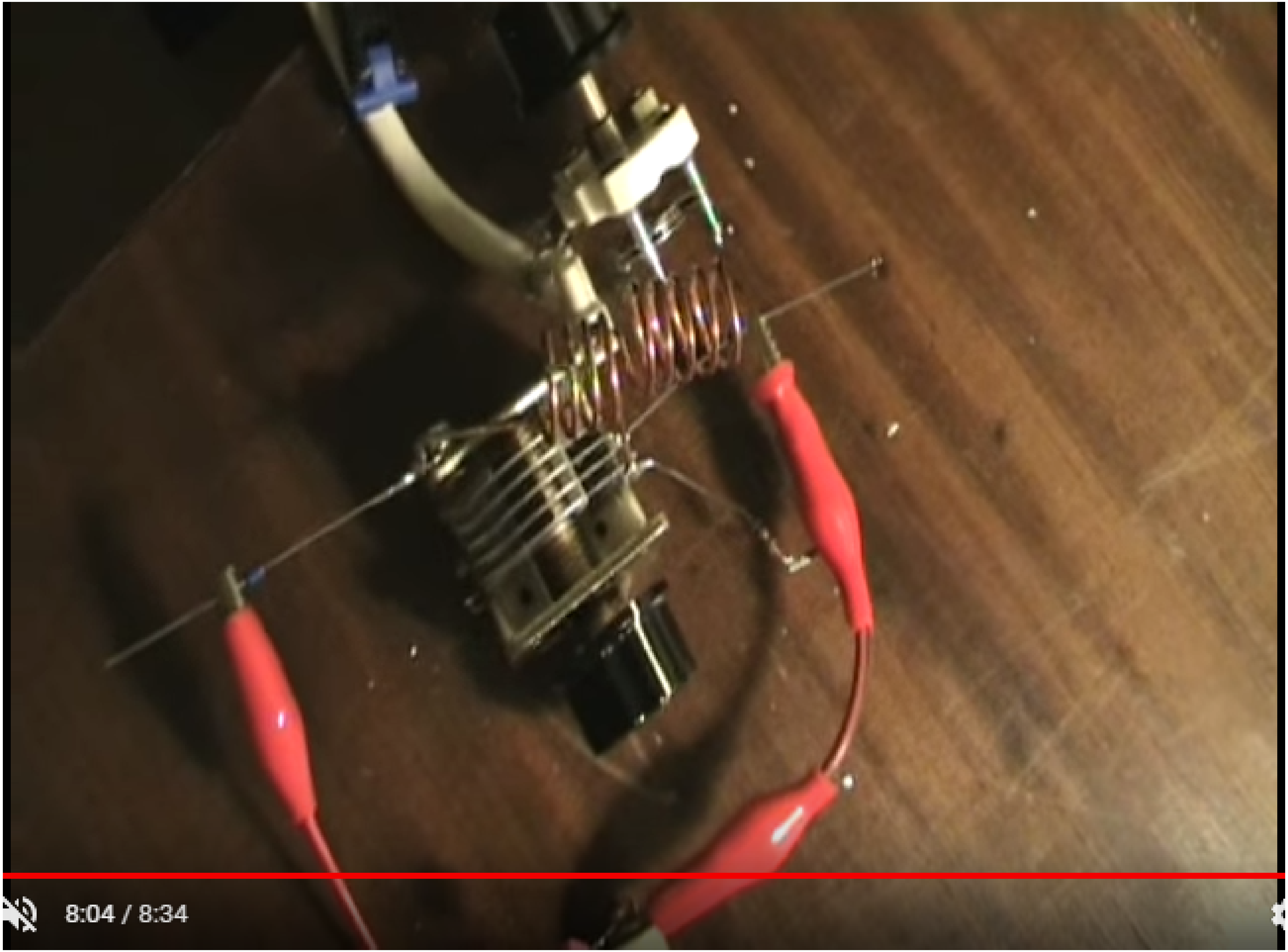


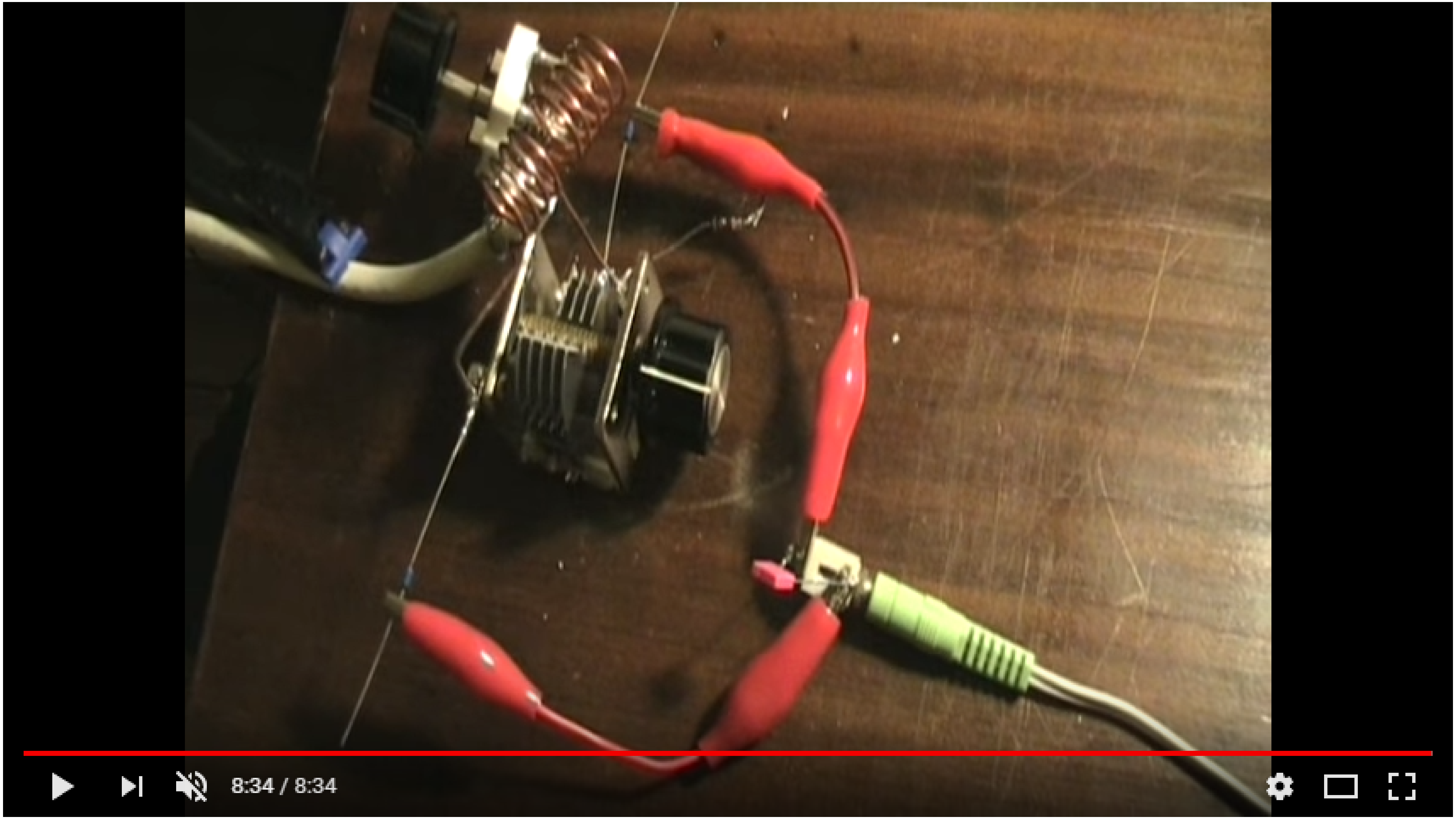




GalenaFM1

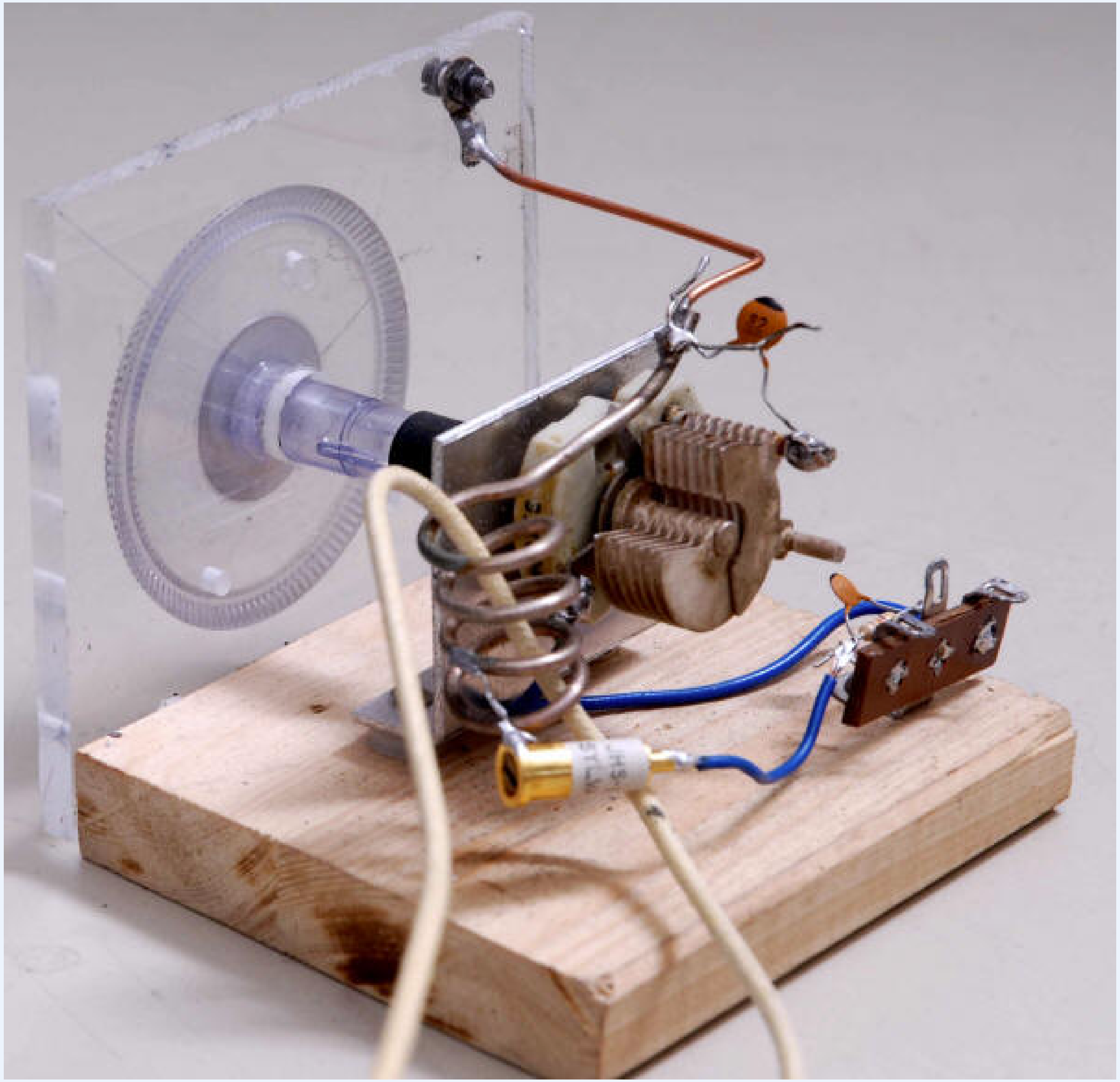

1:06 / 8:34

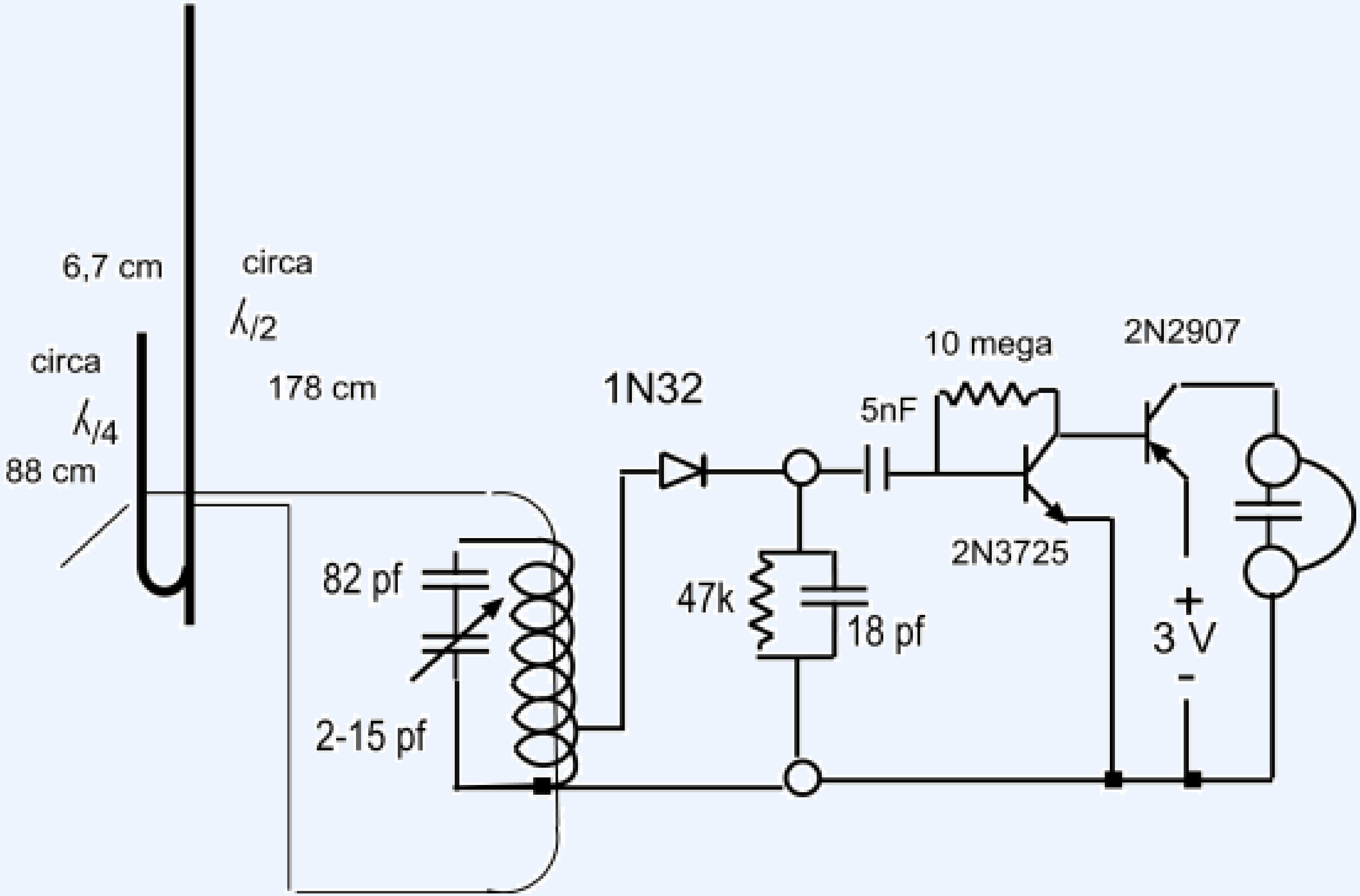

8:04 / 8:34


8:34 / 8:34

Simple crystal receiver for FM

Carlo Bramanti




6,7 cm
circa
λ/2
circa
λ/4
178 cm
88 cm
1N32
5nF
10 mega
2N2907
2N3725
82 pf
2-15 pf
47k
18 pf
+
3 V
-

The theory

Normal AM revelation can not reveal weak signals with the consequence that it is useless to amplify after the revelation, since it increases only the volume and not the sensitivity. Instead the detection of the FM also handles very weak signals: therefore, amplifying after the detection, all the weakest stations appear. The amp that I made amplifies a lot (in AM it also acts as a detector, but in FM it must be preceded by a diode); it can be powered by a 3 V lithium drain and it consumes very little: it is even sufficient to disconnect the earphone for almost zero consumption. This makes the use of a switch superfluous.

J antenna

It is an antenna that is easy to realize by bending a copper pipe by fontaniers, with a diameter of 6 o 8 mm. Fixing to a pole or base does not require isolation.

The diode 1N32

I obtained an additional advantage by replacing the germanium diode OA85 with the one with contact tip silicon 1N32, a little old but available and used as a mixer for the K band.

NOTE

In the aforesaid realization the frequencies from 88 to 104 Mc are listened with a rotation of the variable of only 45 degrees, or half of the excursion. Above I hear nothing.

The excursion with trimmers and padders should therefore be extended, while maintaining the optimal L / C ratio.

Realization:

Coil in silver wire from 2 mm.

Average diameter 14 mm

Length 19.5 mm

Number of turns 4

1 ½ coils outlet from the municipality

Ground connection not necessary

Radio a galena FM

per la “banda commerciale” 88 – 108 MHz

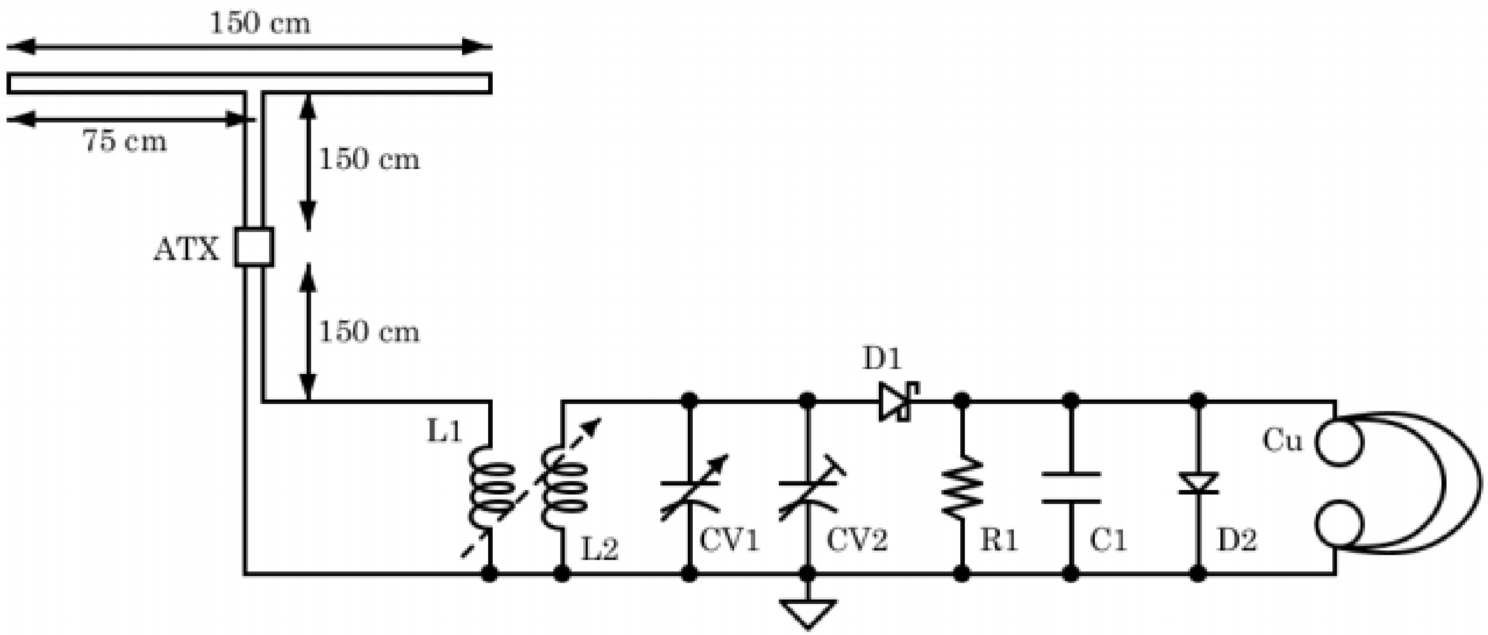


Figura 2: Schema elettrico della radio a galena FM.

I componenti adoperati sono:

- L1 = vedi testo (sezione Bobine L1 e L2);
- L2 = $0.137\mu H$, vedi Figura 7;
- CV1 = Johnson 160-211-1 $(2.7 - 10.8)pF$ per sezione;
- CV2 = trimmer tubolare da $(5 \div 15)pF$;
- D1 = diodo Schottky Skyworks modello SMS7630-001;
- D2 = diodo di segnale 1N4148;
- R1 = $47k\Omega$, $1/4$W;
- C1 = $100pF$ ceramico a disco;
- Cu = cuffie ad alta impedenza ($2k\Omega$ o superiore);
- ATX = connettore ATX femmina e header pin;
- Due connettori banana femmina.

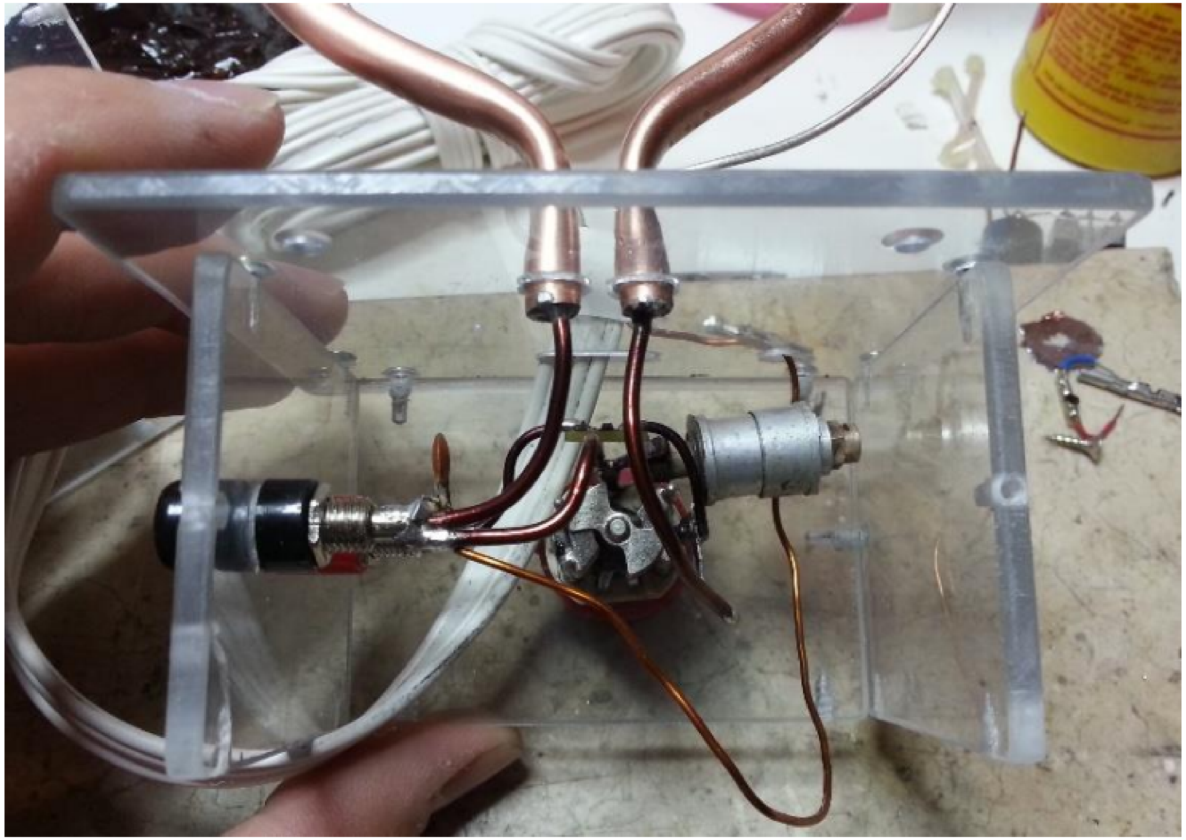


Figura 8: Vista posteriore del cablaggio

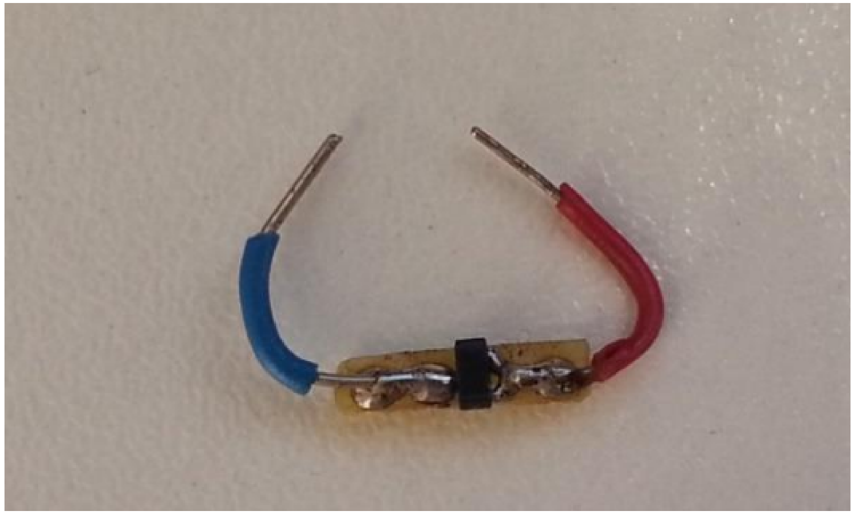


Figura 9: Particolare del diodo sulla basetta millefori.

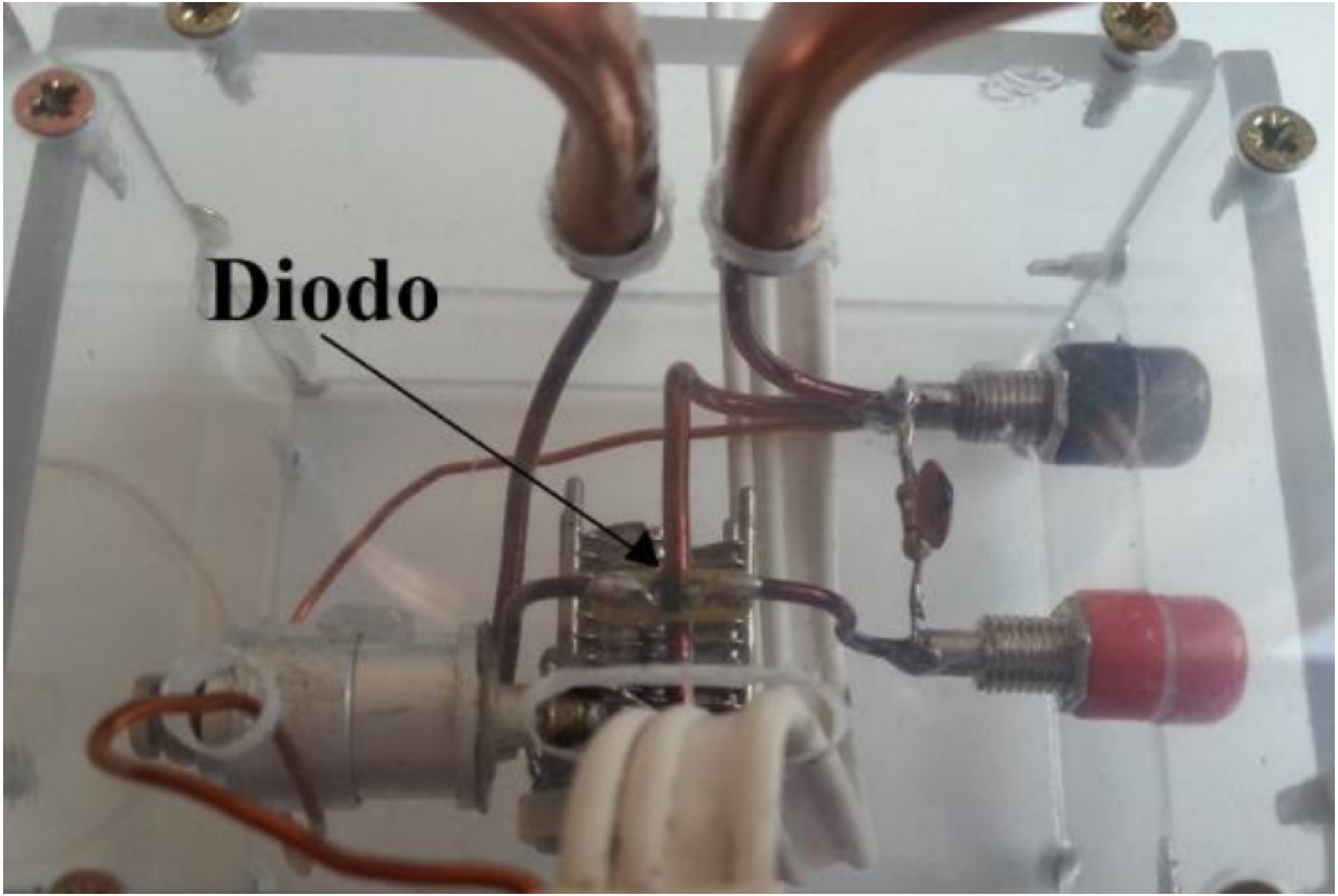
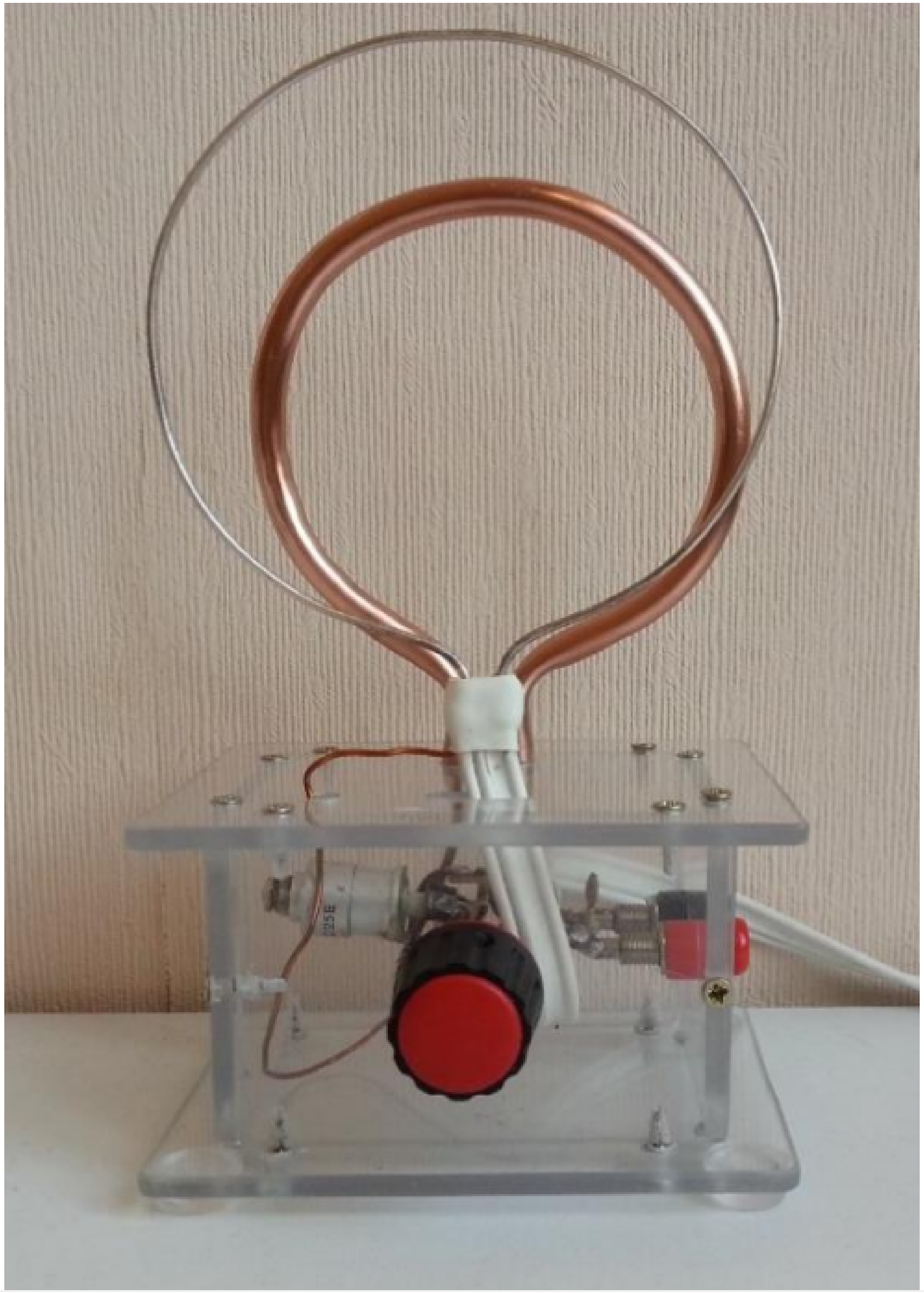
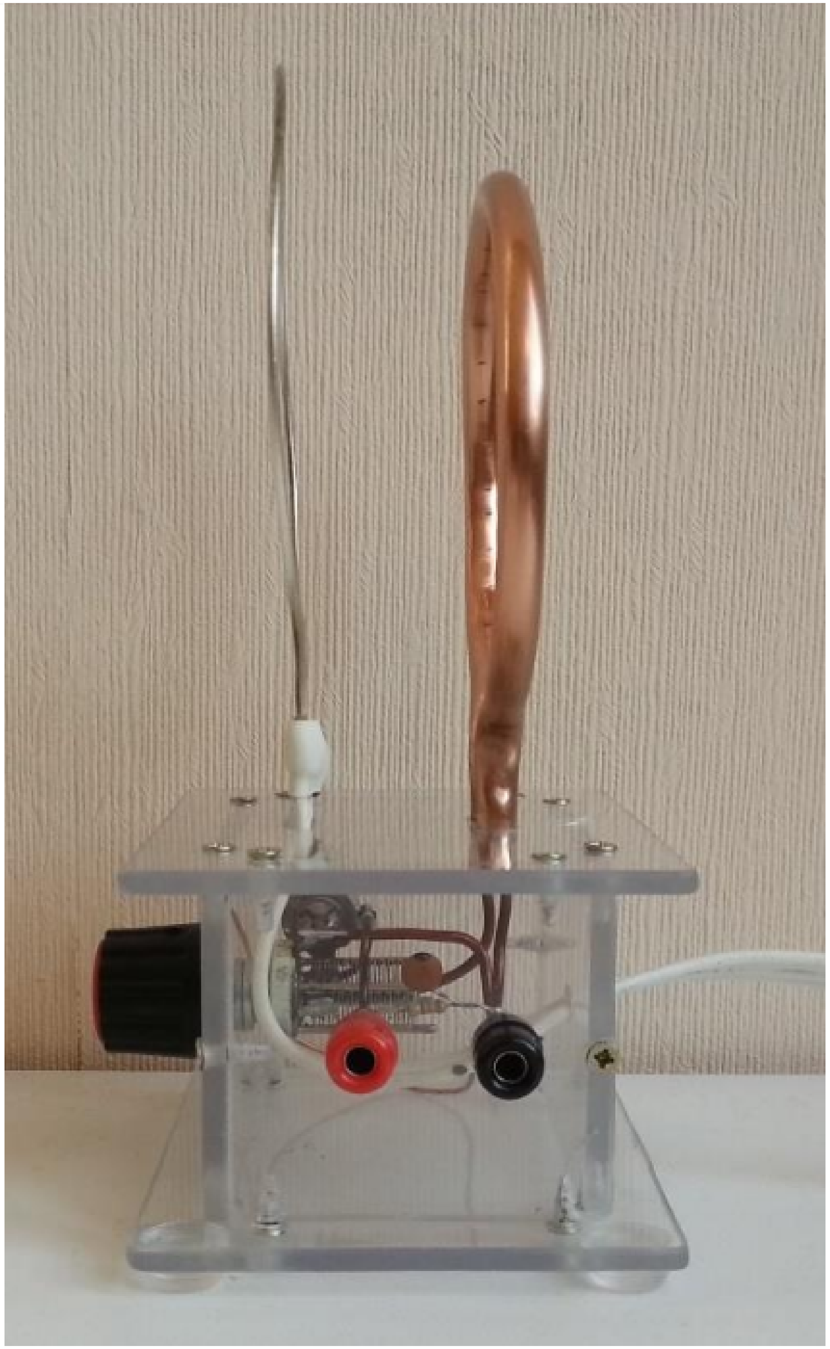
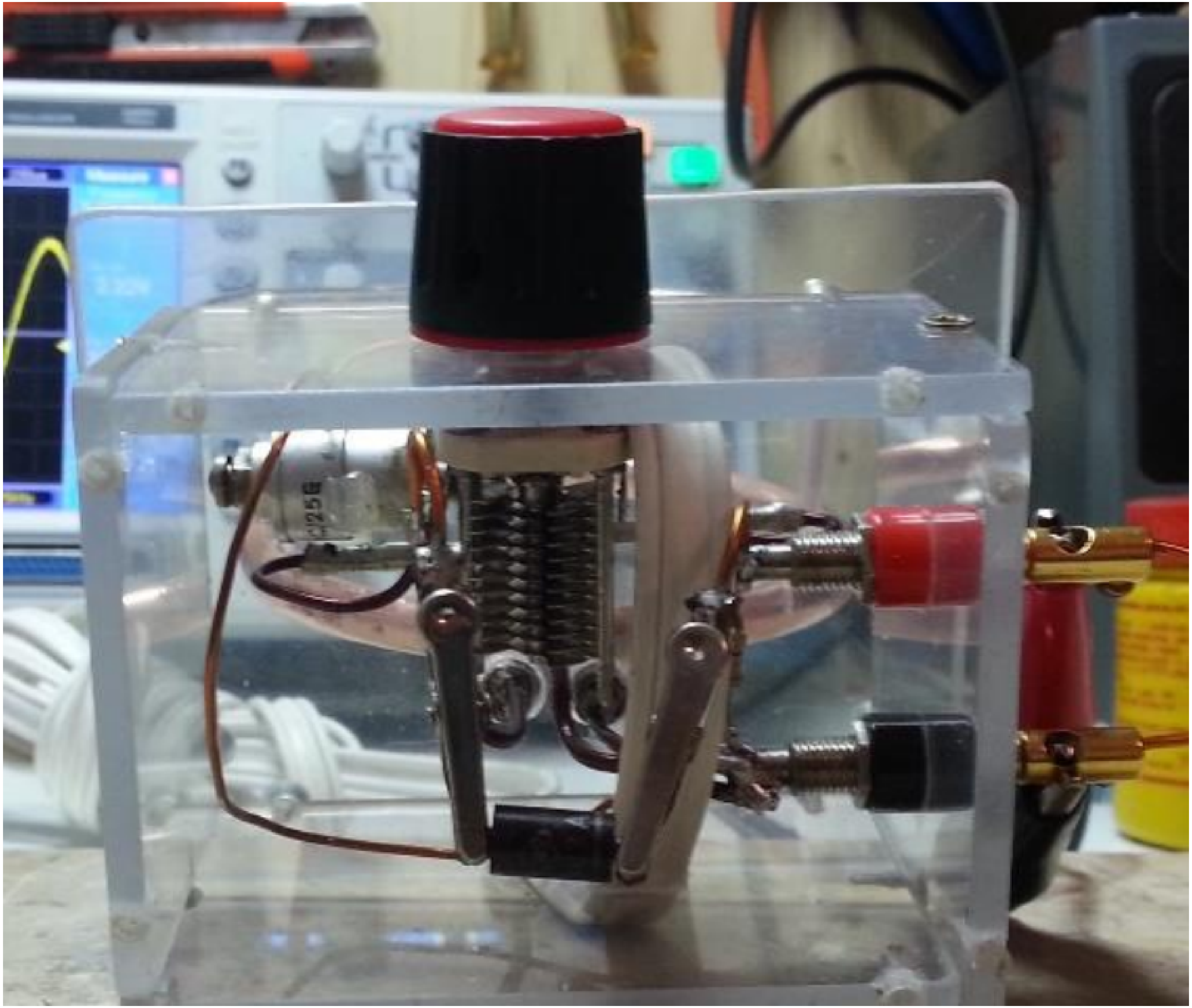
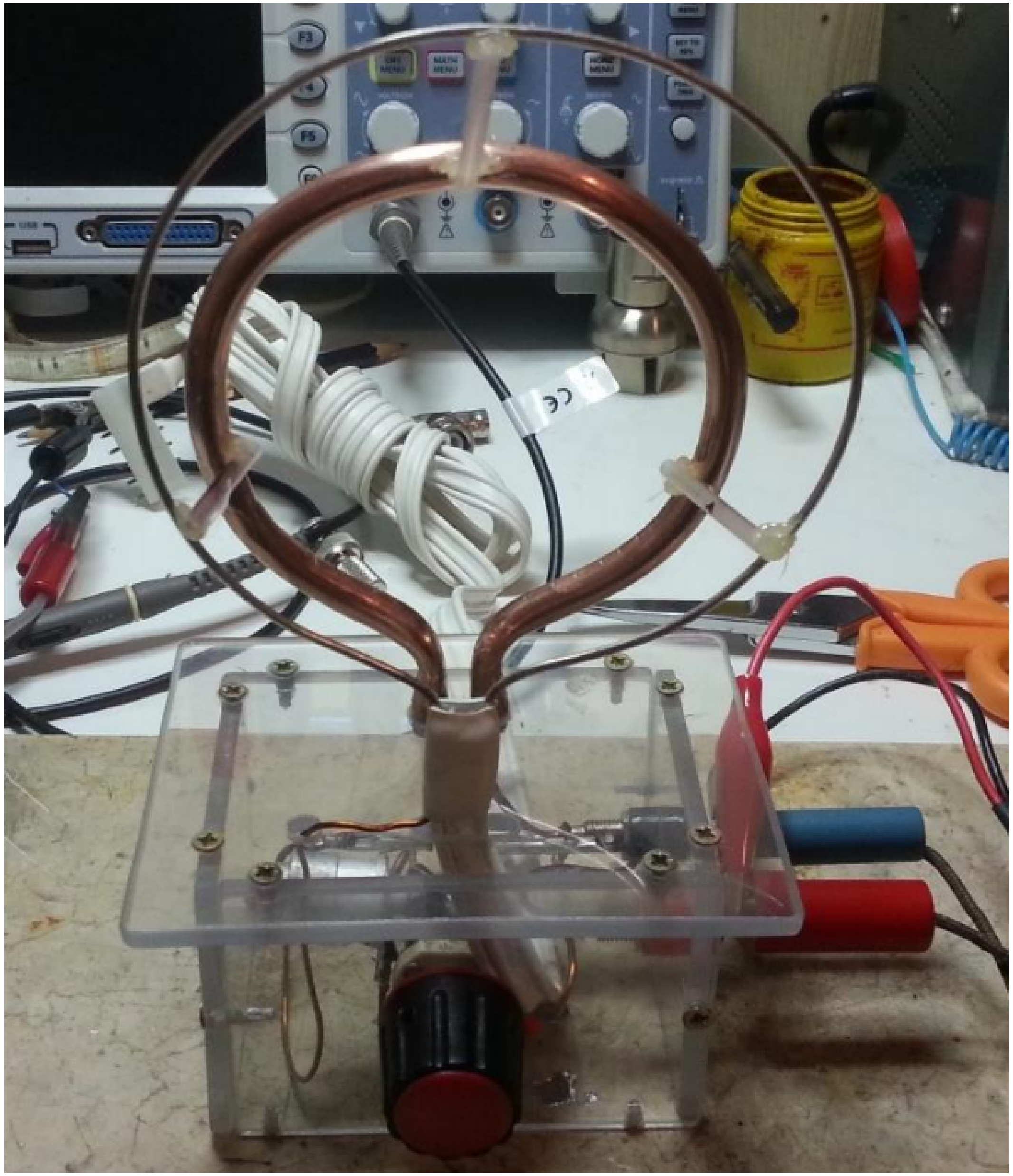


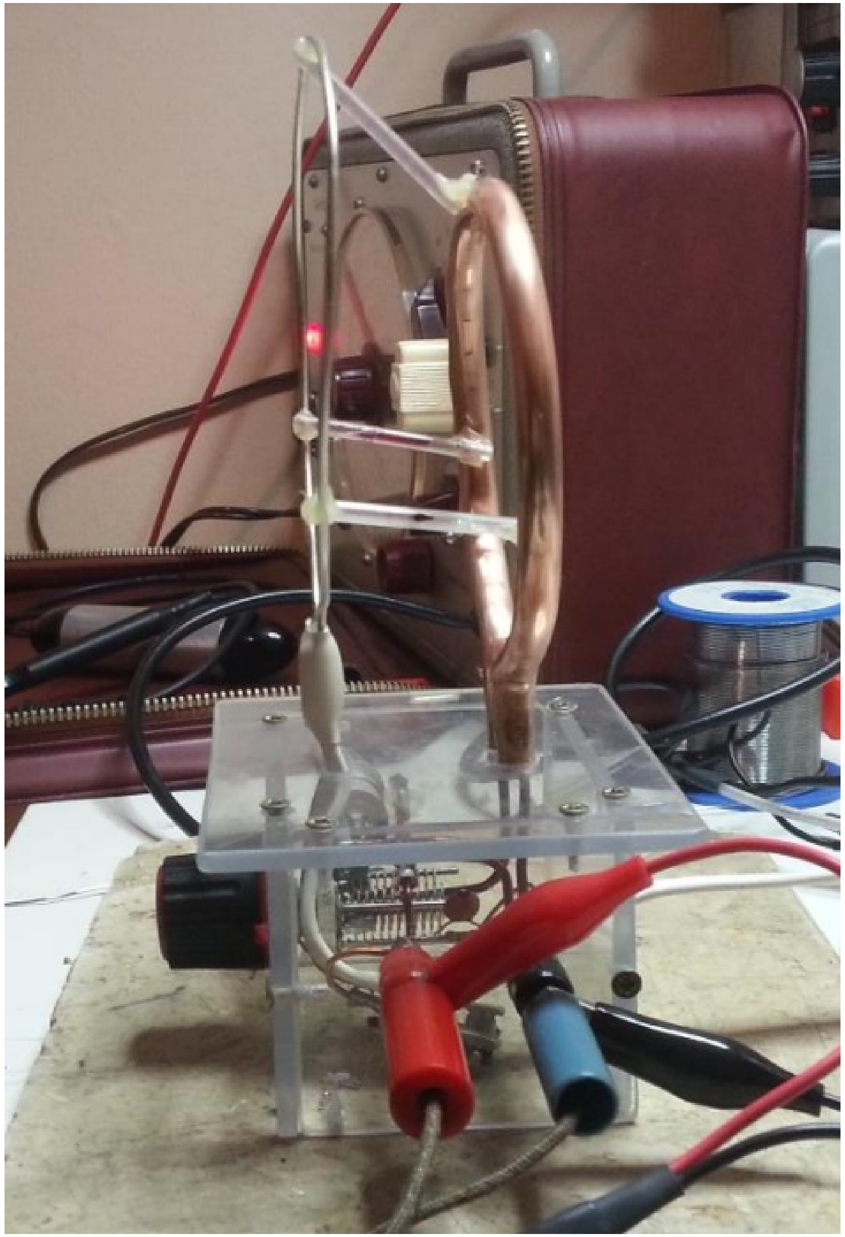
Figura 10: Cablaggio del diodo rivelatore.

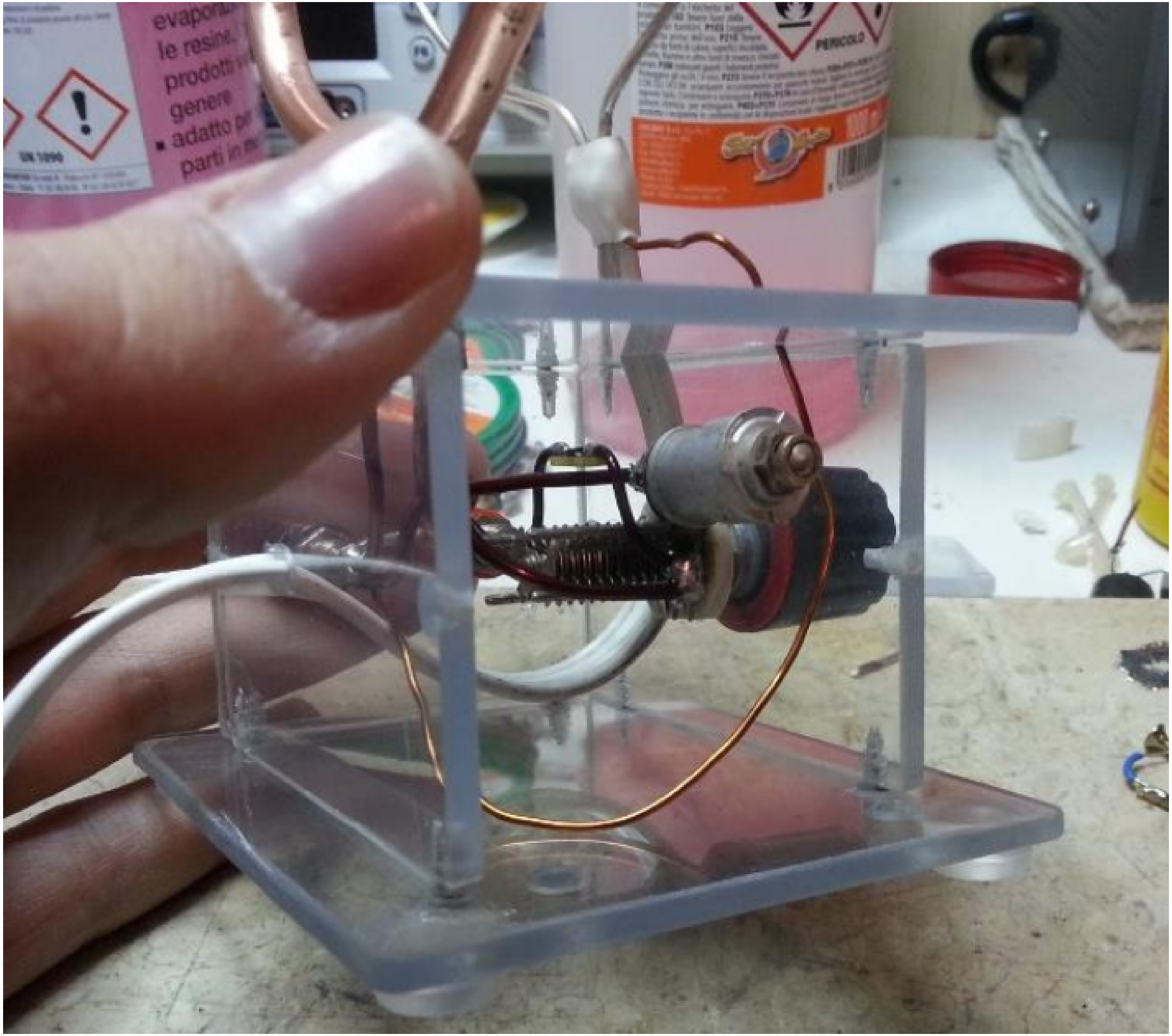


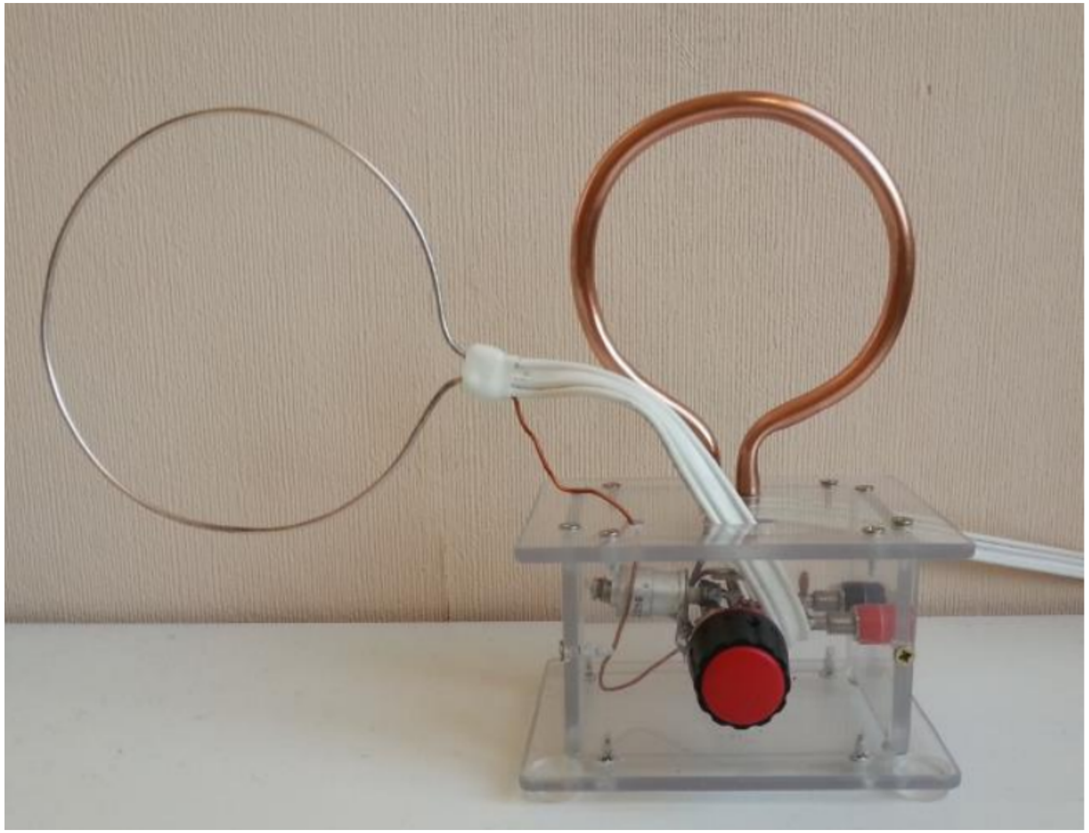



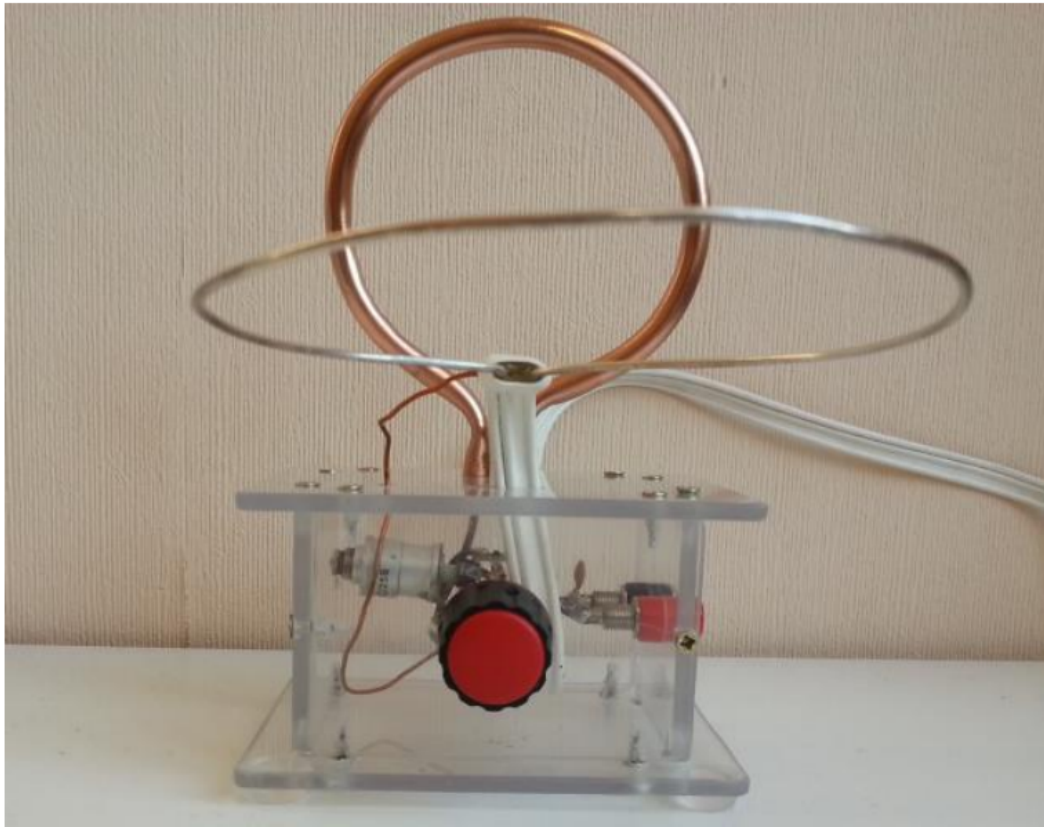


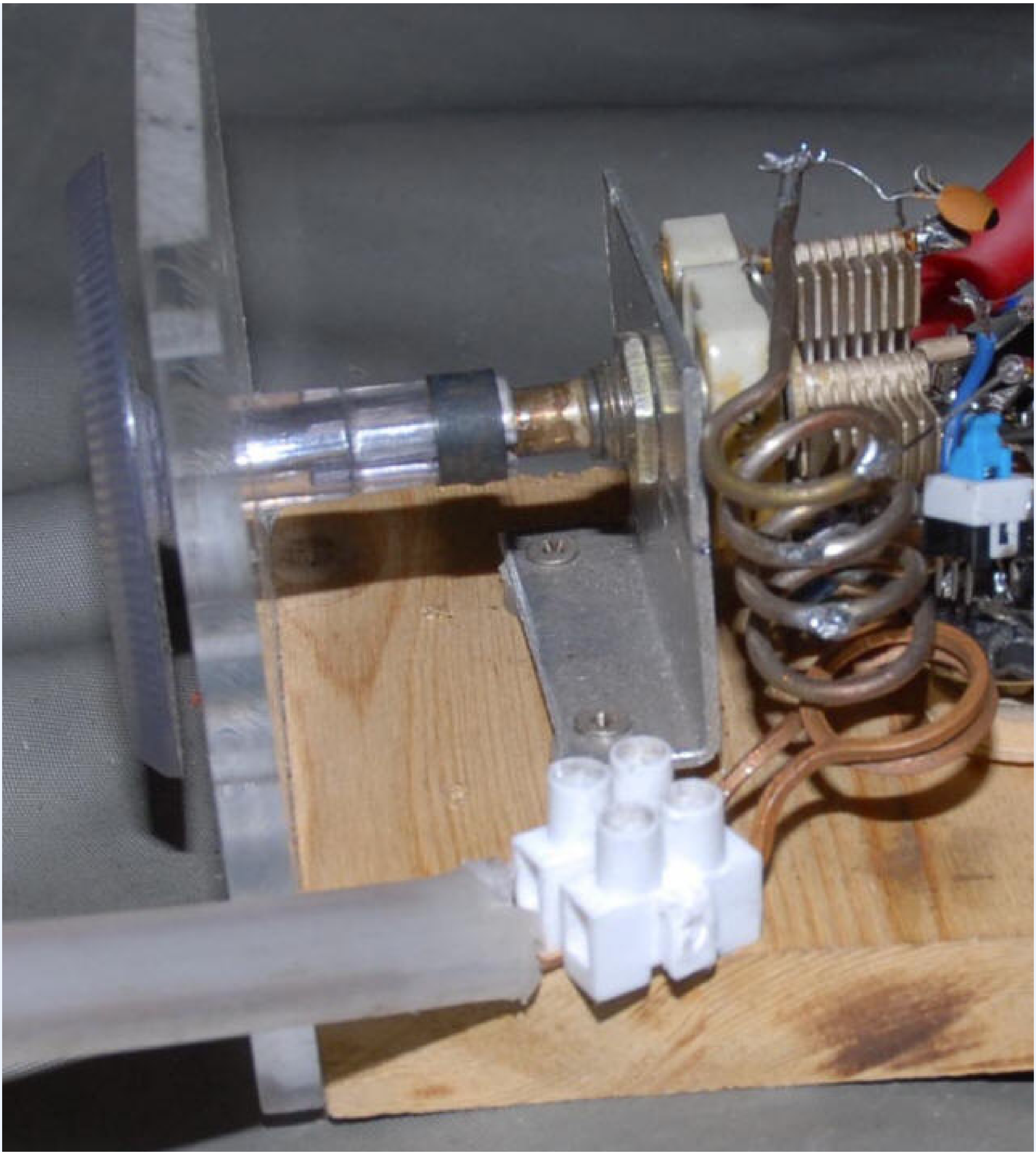

F3
F5

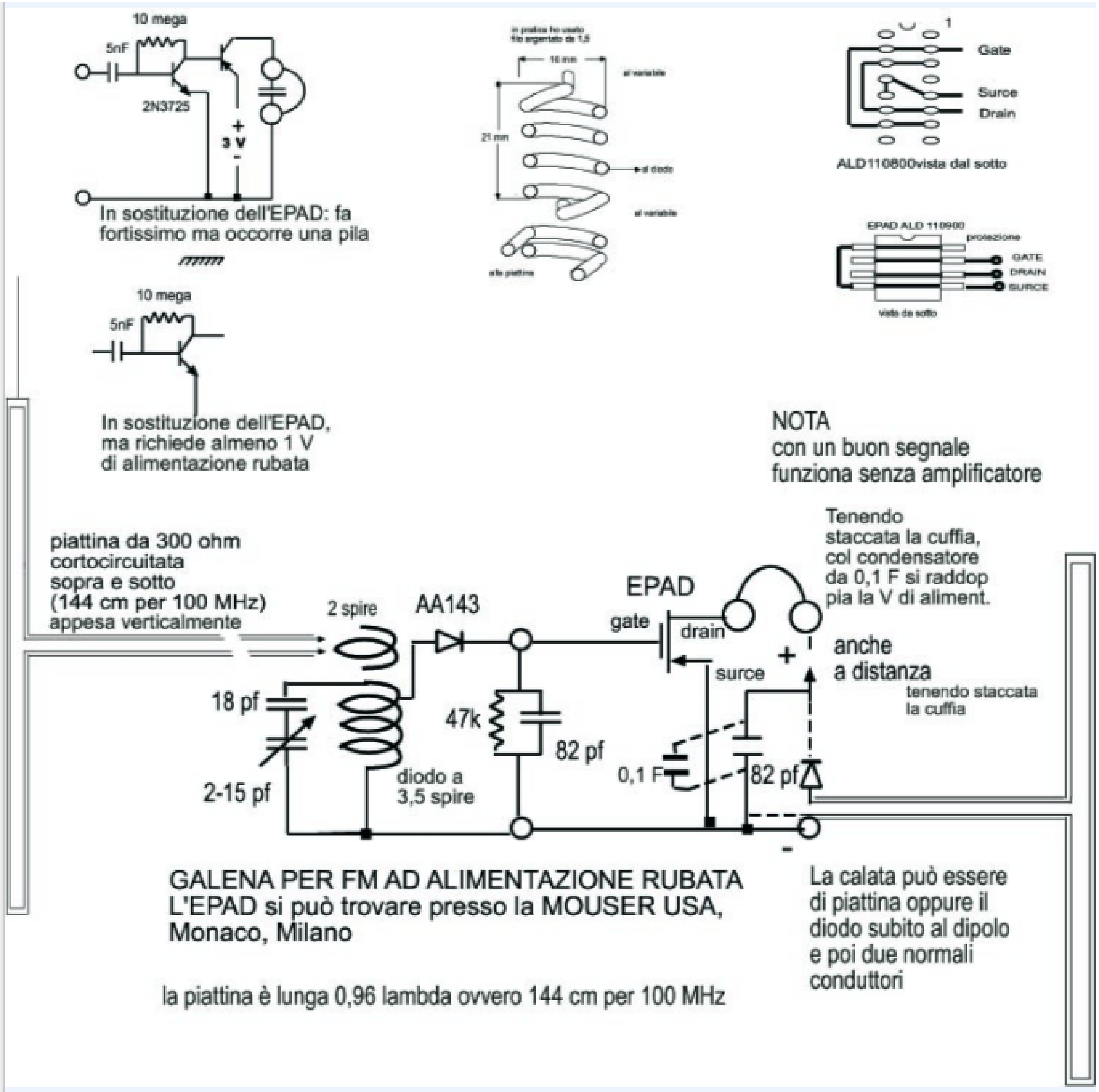



le resine,
genere
UN 1090
PERICOLO

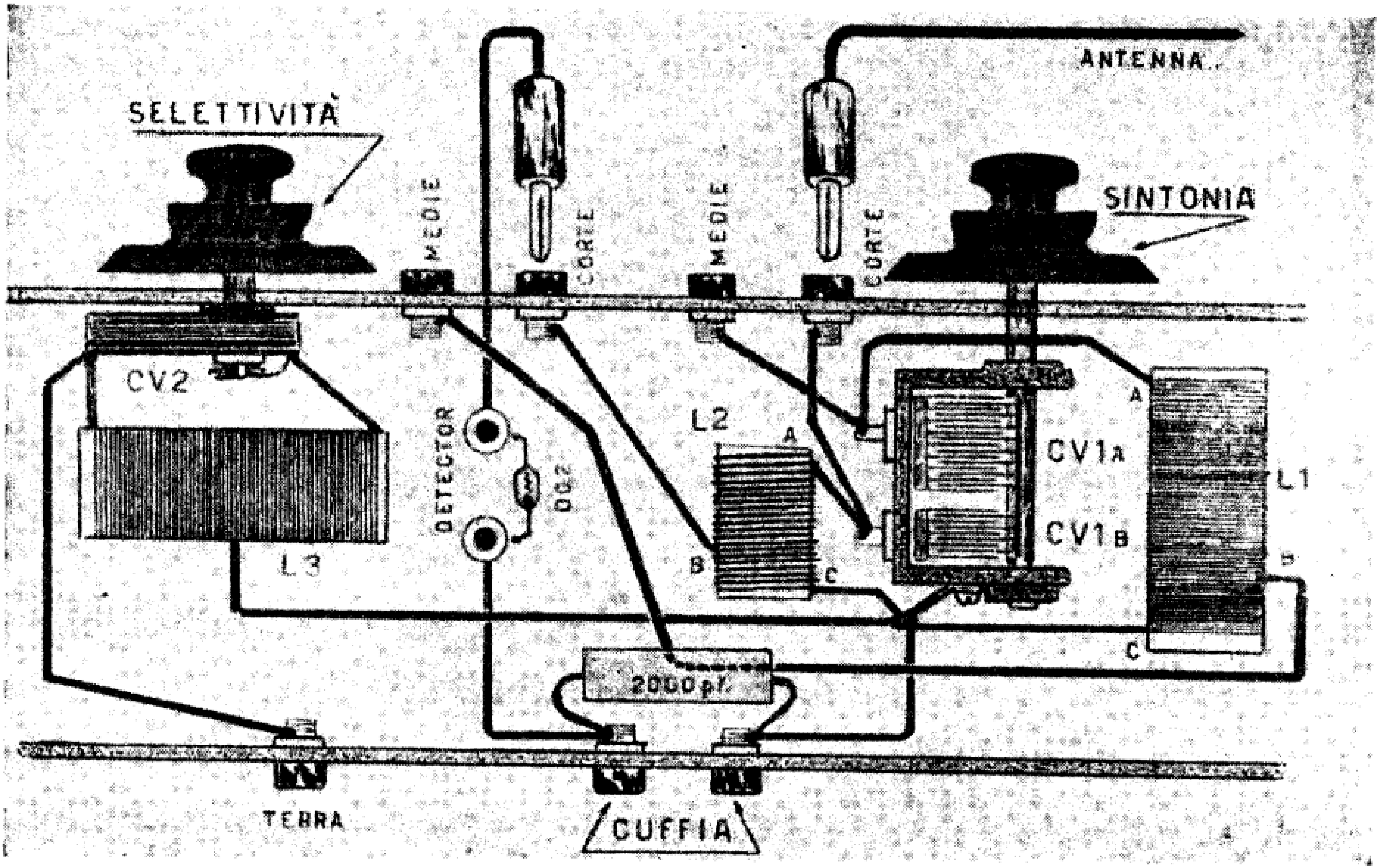




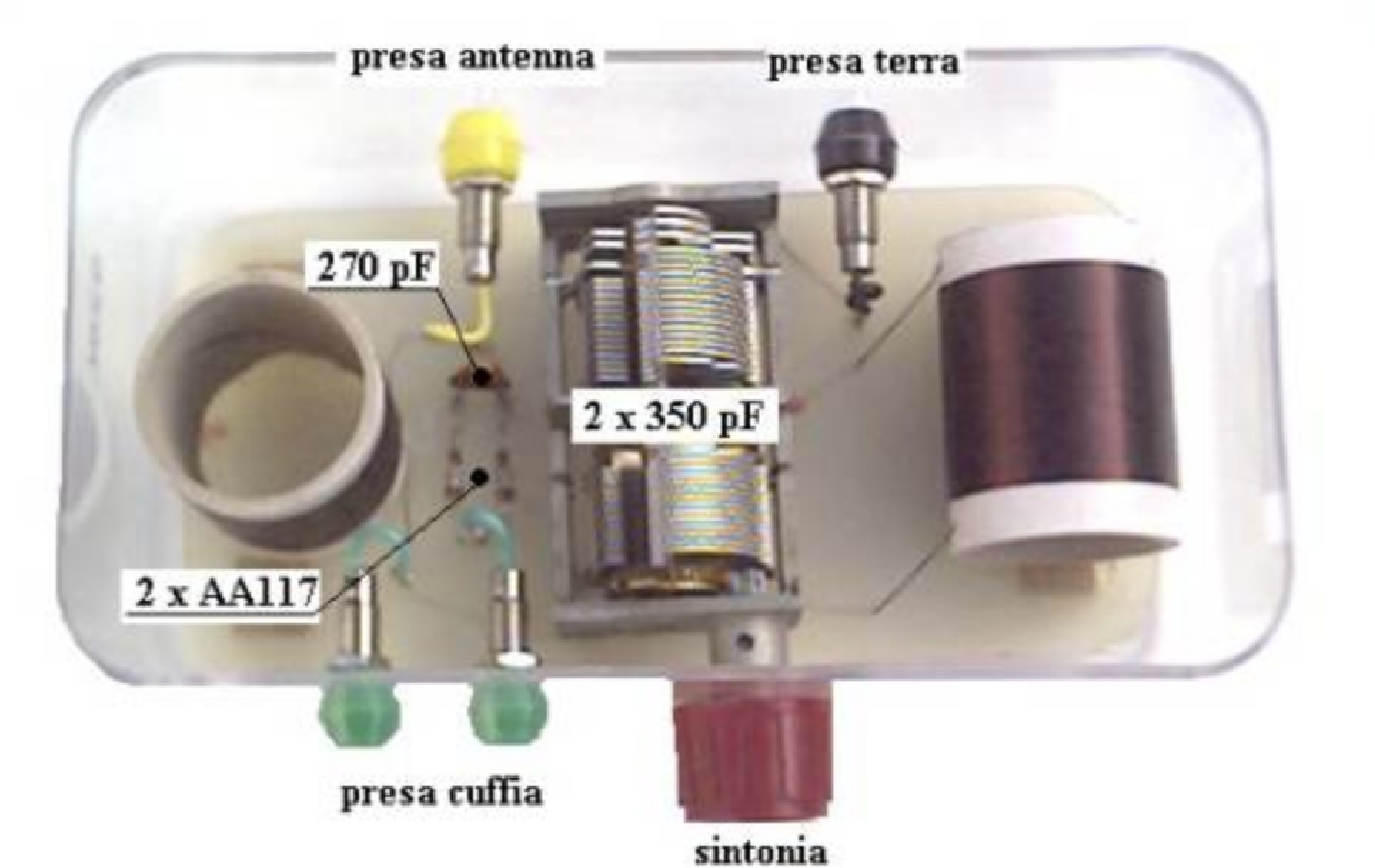


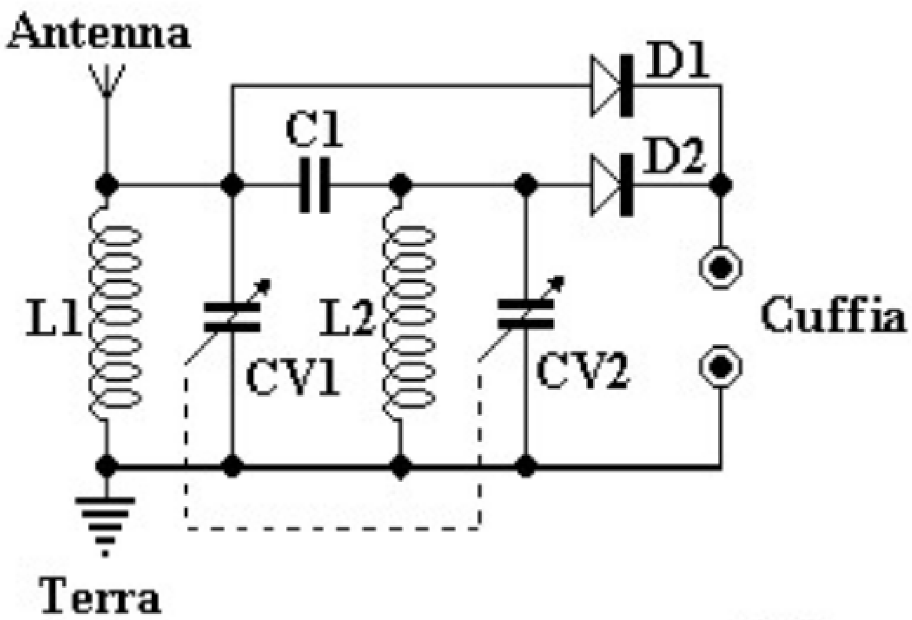


10 mega
5nF
2N3725
+
3 V
-
In sostituzione dell'EPAD: fa
fortissimo ma occorre una pila
in pratica ho usato
filo argentato da 1,5
16 mm
21 mm
al variabile
al diodo
al variabile
alla piattina
1
Gate
Surce
Drain
ALD110800vista dal sotto
EPAD ALD 110900
protezione
GATE
DRAIN
SURCE
vista da sotto
10 mega
5nF
In sostituzione dell'EPAD,
ma richiede almeno 1 V
di alimentazione rubata
NOTA
con un buon segnale
funziona senza amplificatore
Tenendo
staccata la cuffia,
col condensatore
da 0,1 F si raddop
pia la V di aliment.
piattina da 300 ohm
cortocircuitata
sopra e sotto
(144 cm per 100 MHz)
appesa verticalmente
2 spire
AA143
EPAD
gate
drain
surce
+
anche
a distanza
tenendo staccata
la cuffia
18 pf
47k
82 pf
0,1 F
82 pf
2-15 pf
diodo a
3,5 spire
-
GALENA PER FM AD ALIMENTAZIONE RUBATA
L'EPAD si può trovare presso la MOUSER USA,
Monaco, Milano
la piattina è lunga 0,96 lambda ovvero 144 cm per 100 MHz
La calata può essere
di piattina oppure il
diodo subito al dipolo
e poi due normali
conduttori


ANTENNA
SELETTIVITÀ
SINTONIA
MEDIE
CORTE
MEDIE
CORTE
CV2
L3
L2
A
B
C
DETECTOR
OC2
CV1A
CV1B
L1
A
B
C
2000 pf
TERRA
CUFFIA

Un progetto di Luciano Loria

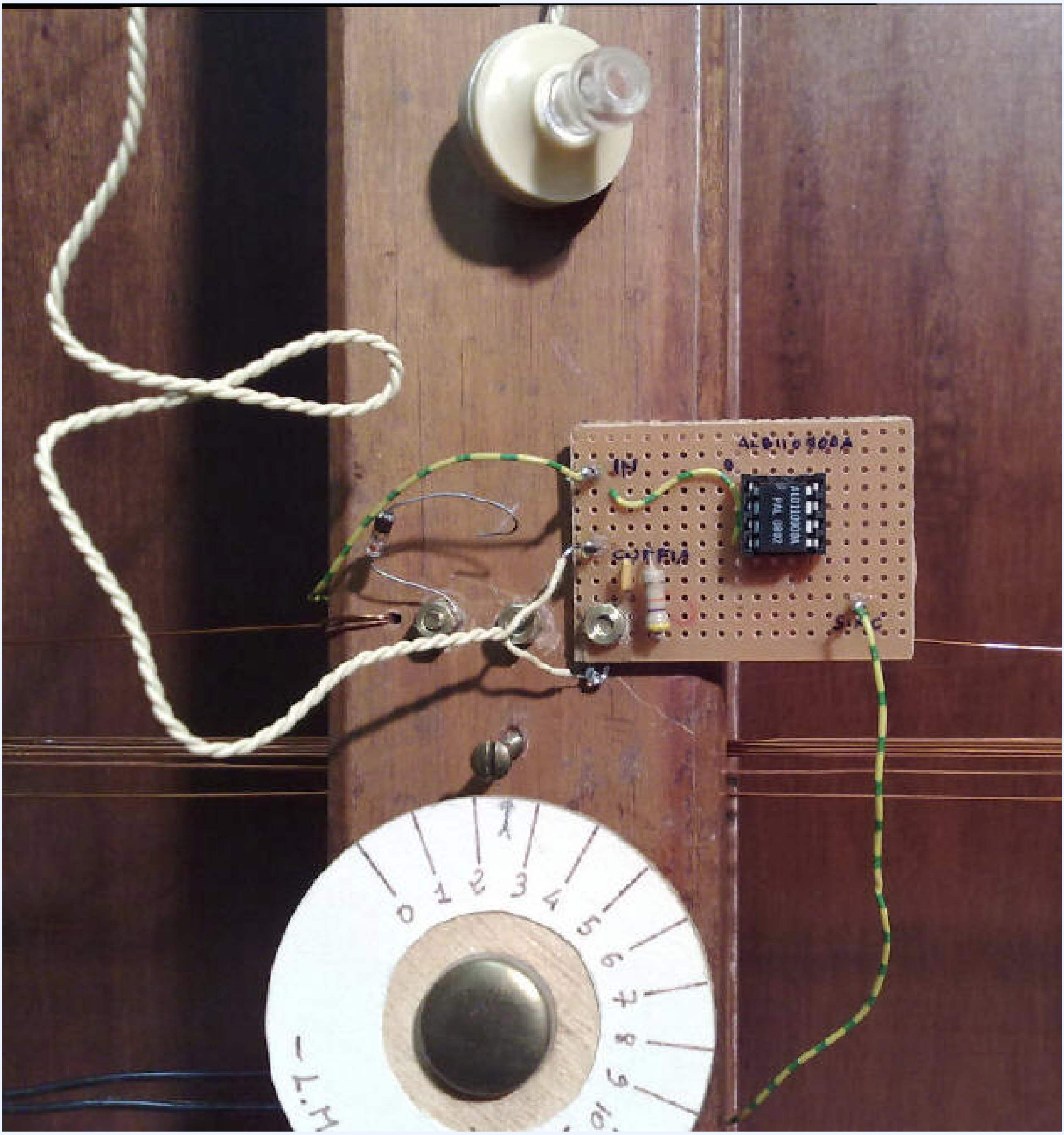




Materiale occorrente

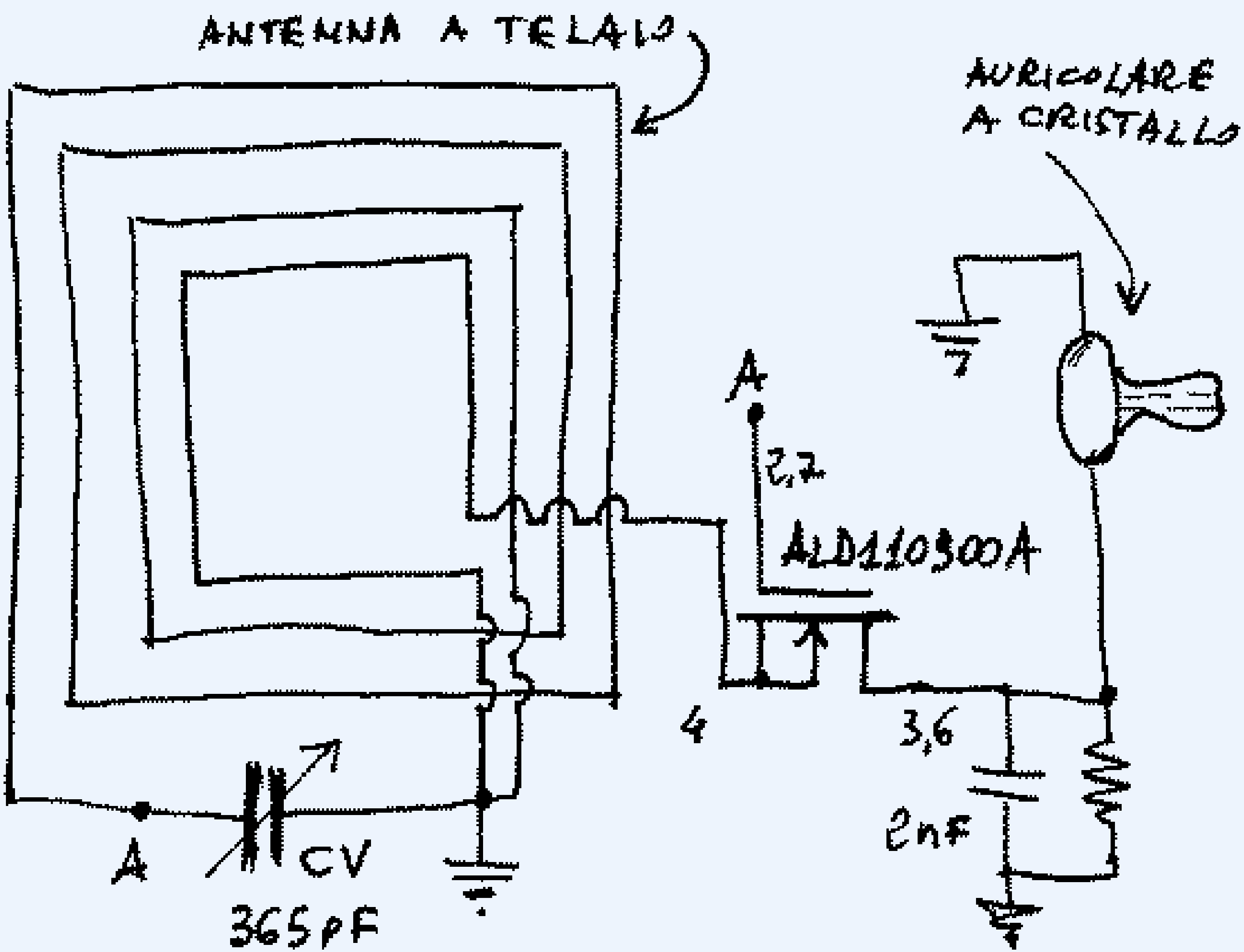
L1; L2 = 90 spire filo rame smaltato Ø 0,3 mm su tubo isolante Ø 3 cm
CV1; CV2 = variabile in aria 350 + 350 pF
C1 = condensatore ceramico 220÷330 pF
D1; D2 = diodo al germanio (AA117)

Schema elettrico



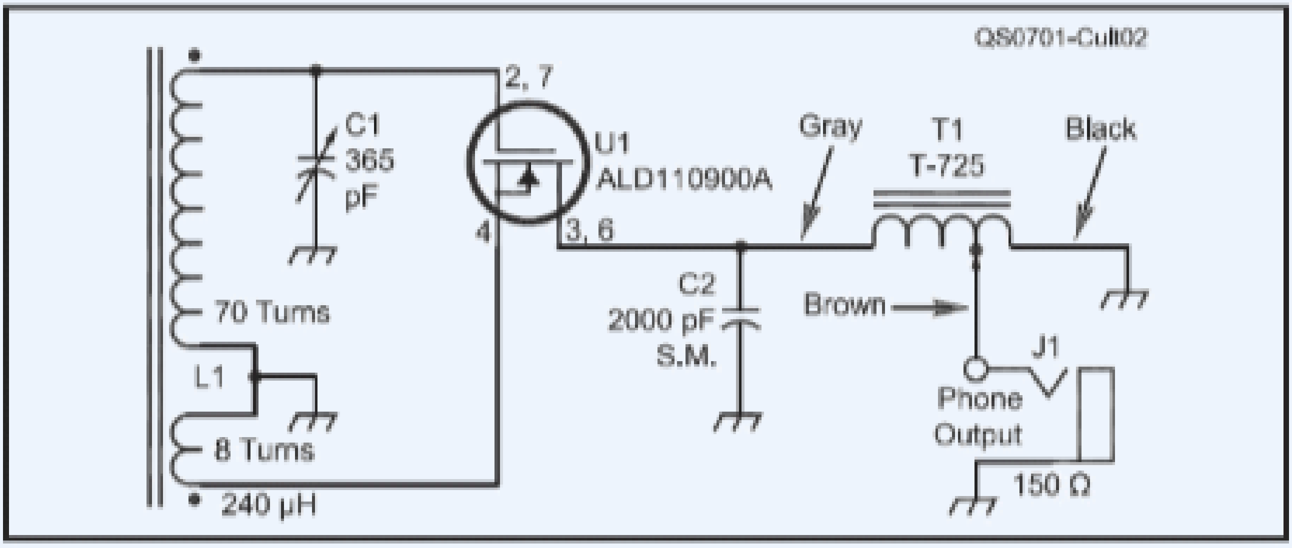
can see I left the existing 1N34 diode mounted, so that it can be reinserted to make compariso

For the tests I used my [receiver with a panel antenna](), experimented with great satisfaction a few years ago. To adapt the reception circuit I had to make some small changes, obtaining a scheme like the one below:

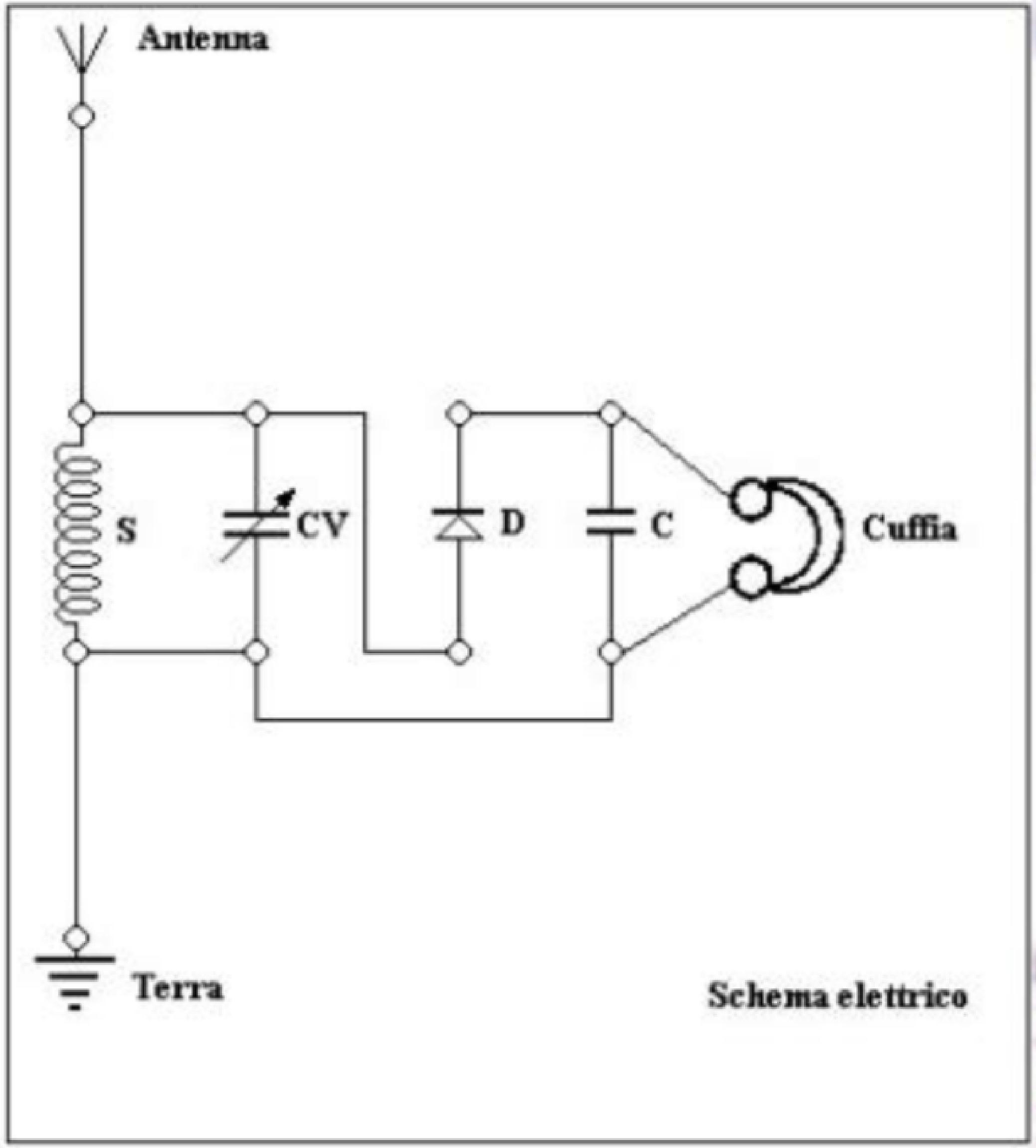


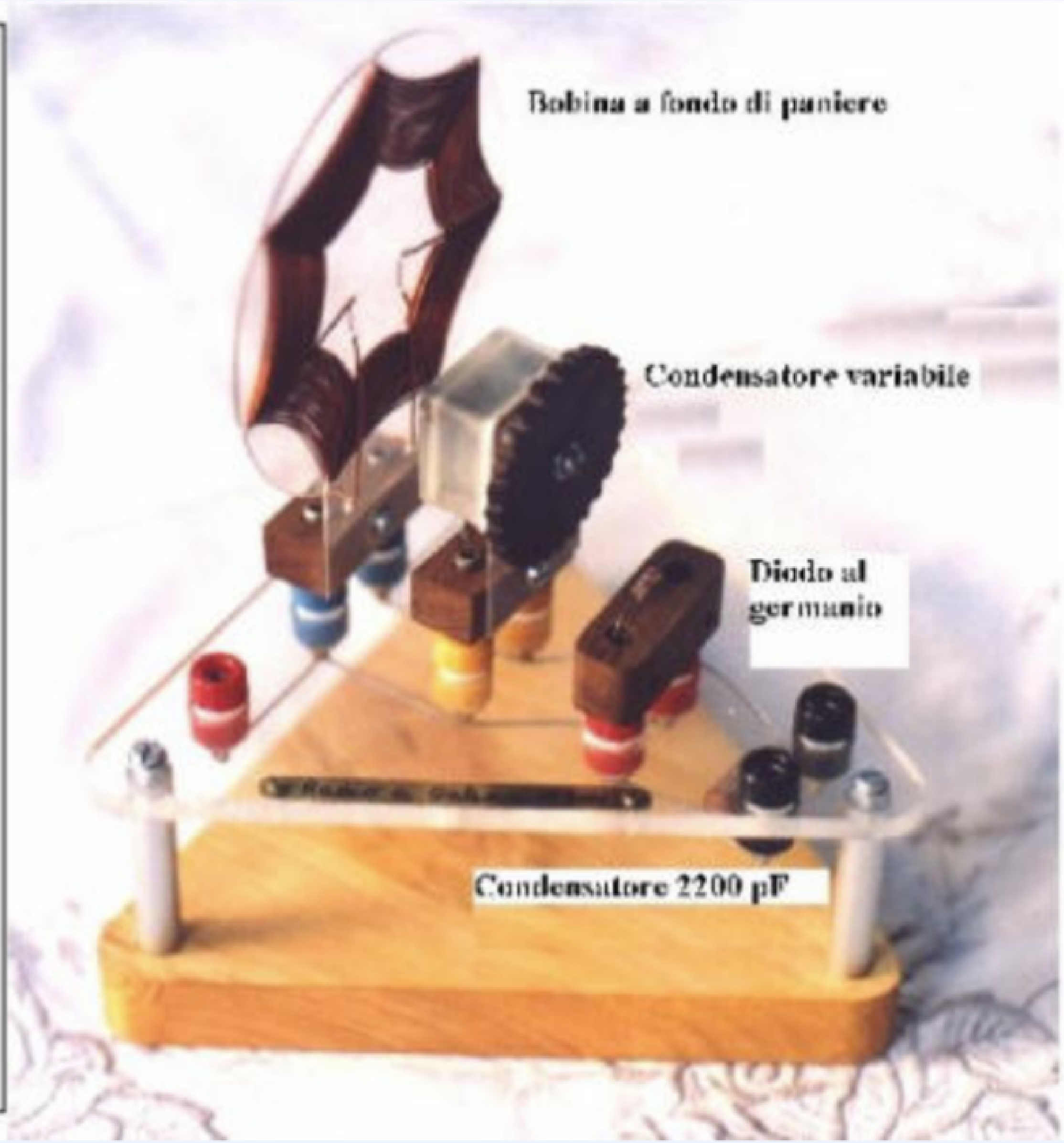
We increase sensitivity through the use of a
modern zero-threshold mosfet, always without power supply

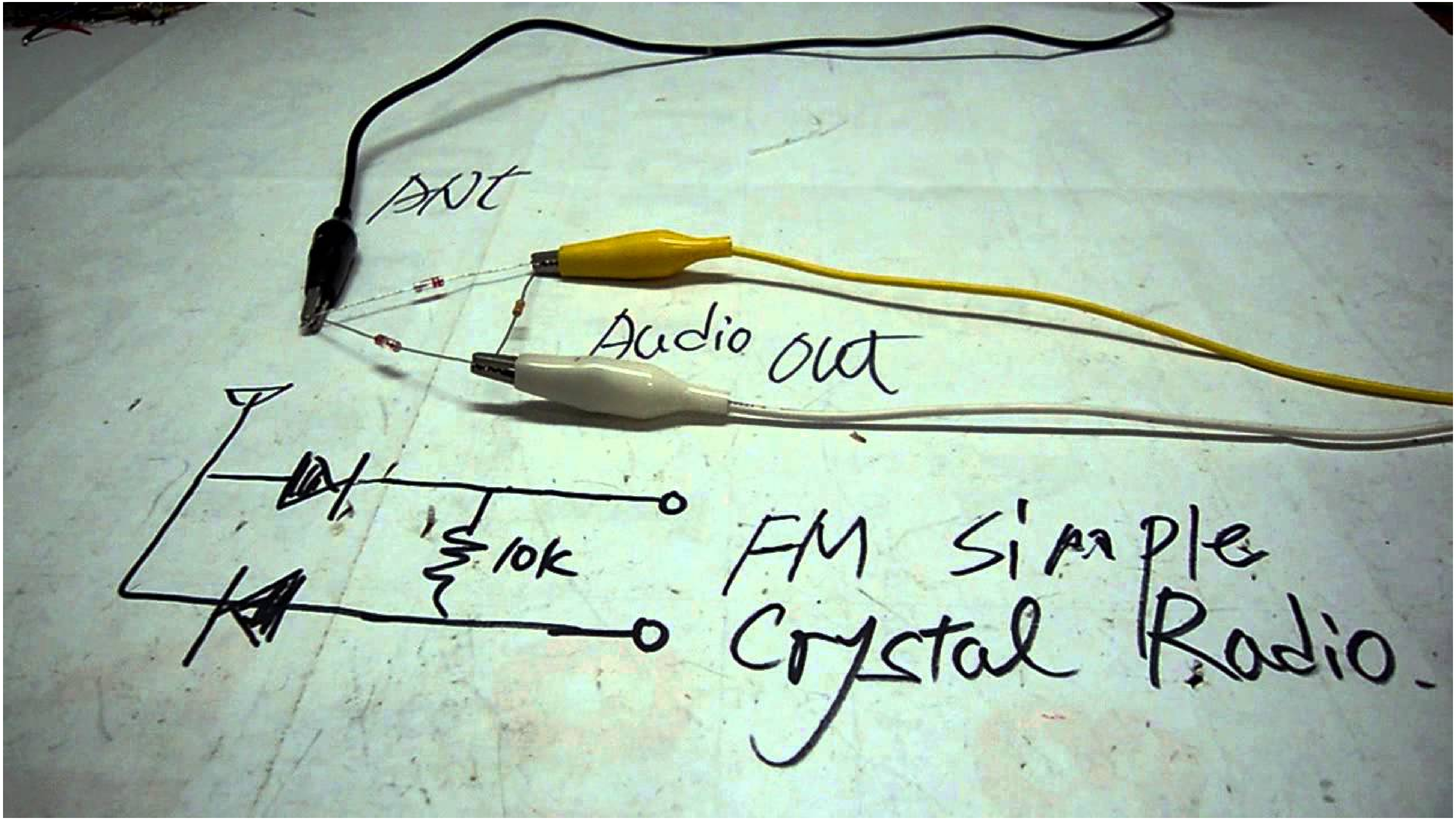
Principle of operation
From time to time, some new devices appear on the market for electronic components, suitable for experimentation in a "crystal" reception circuit. It happened a few years ago with low-fall "schottky" diodes (BAT46 etc.), which were proposed as good substitutes for old germanium diodes. Recently I have read this article by Peter Hobbs, in which a recently released device is presented, the ALD110900A , mounted in a "high sensitivity" crystal receiver. This is a double mosfet with **a conduction threshold equal to zero**, ideal for detecting without loss a very weak signal like the one that is formed in a crystal receiver. The author proposes the realization of a scheme similar to the following one, which turns out to be of the synchronous detection type.

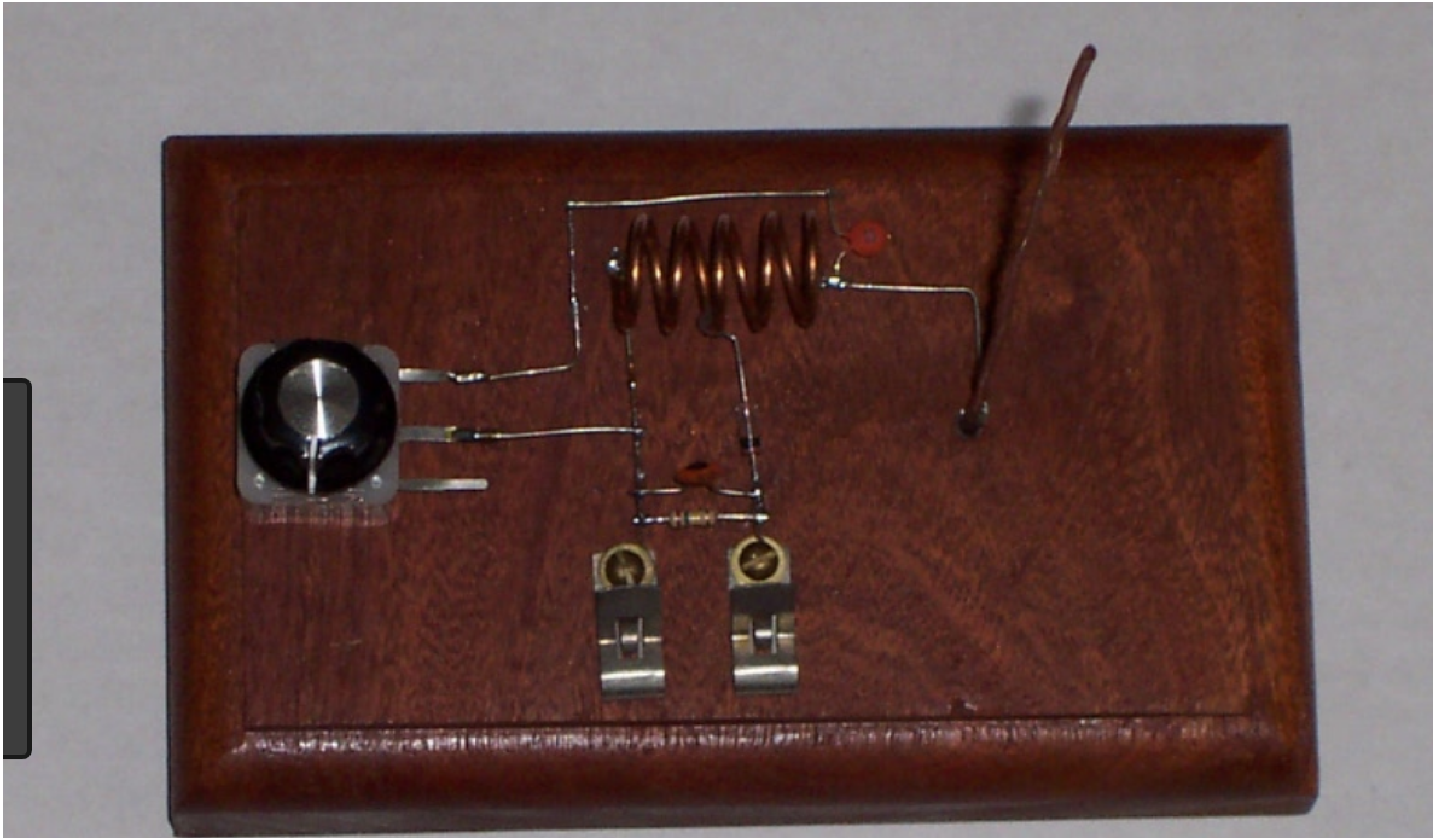


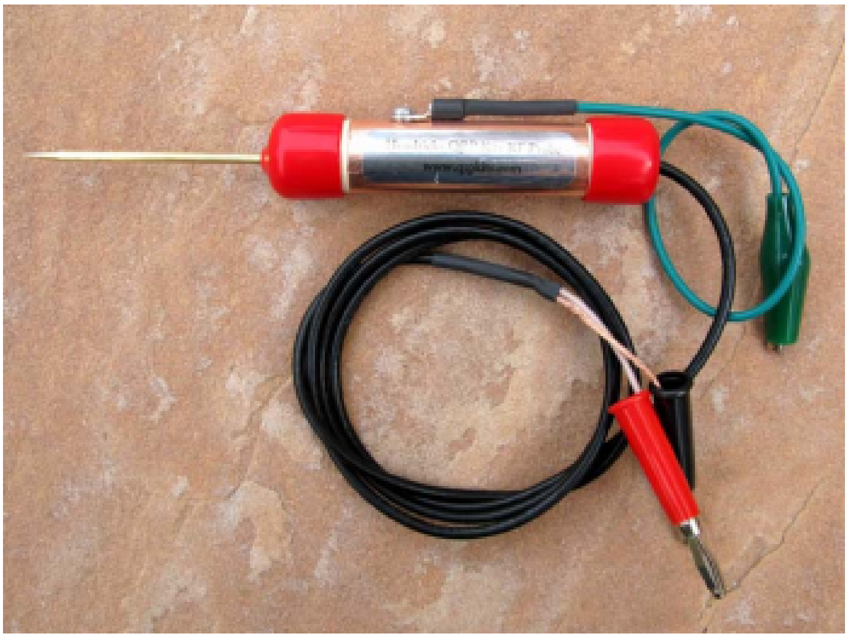
According to the author, the sensitivity is so high as to allow the realization of a receiver without an external antenna, based on the use of only the ferrite antenna, like that of transistor receivers. Its scheme uses as a transducer a telephone capsule coupled to the receiver by an adaptation transformer (this solution deserves to be better investigated).


Antenna
S
CV
D
C
Cuffia
Terra
Schema elettrico


Bobina a fondo di paniere
Condensatore variabile
Diodo al germanio
Condensatore 2200 pF

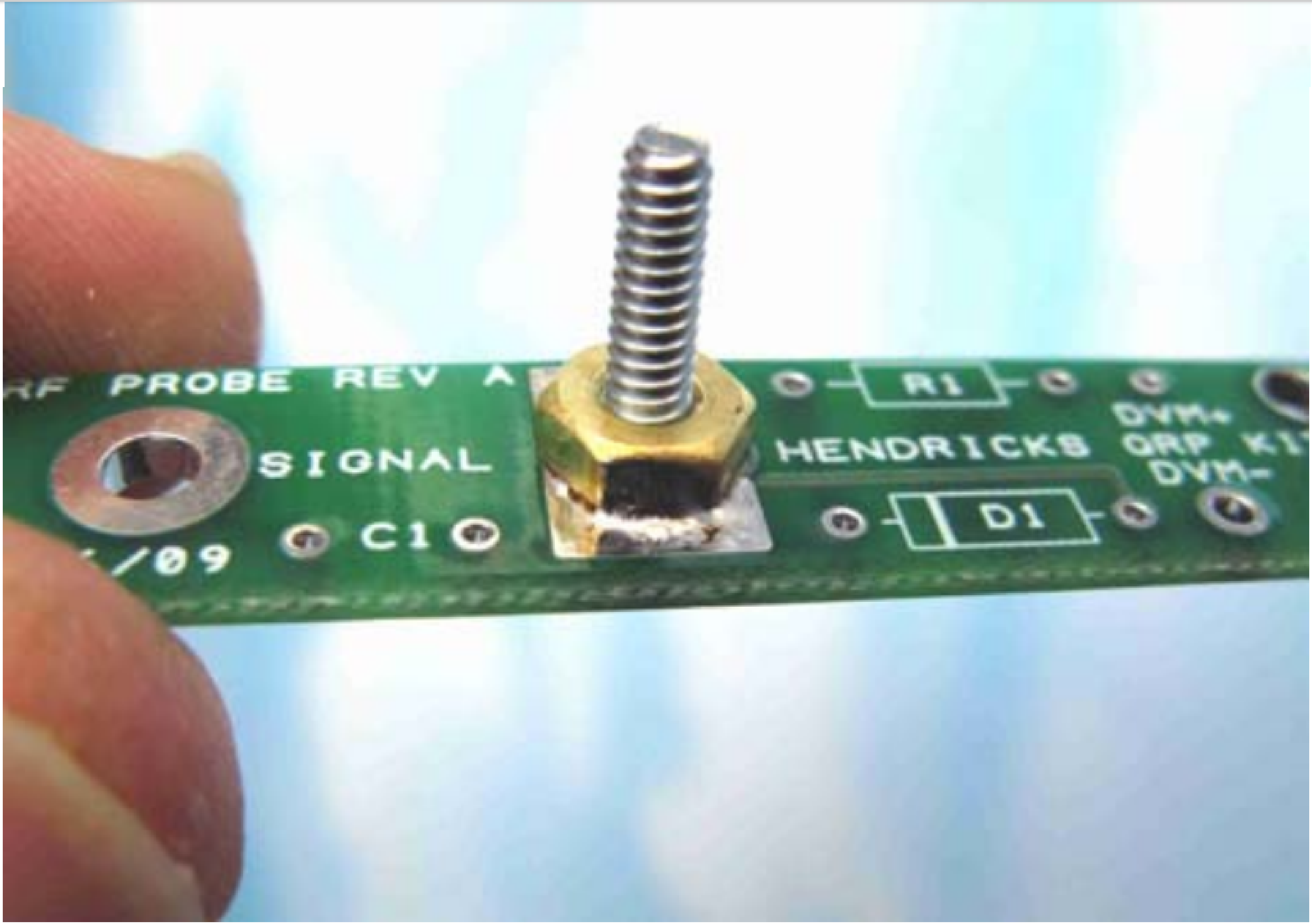

ANt
Audio out
10K
FM simple
Crystal Radio

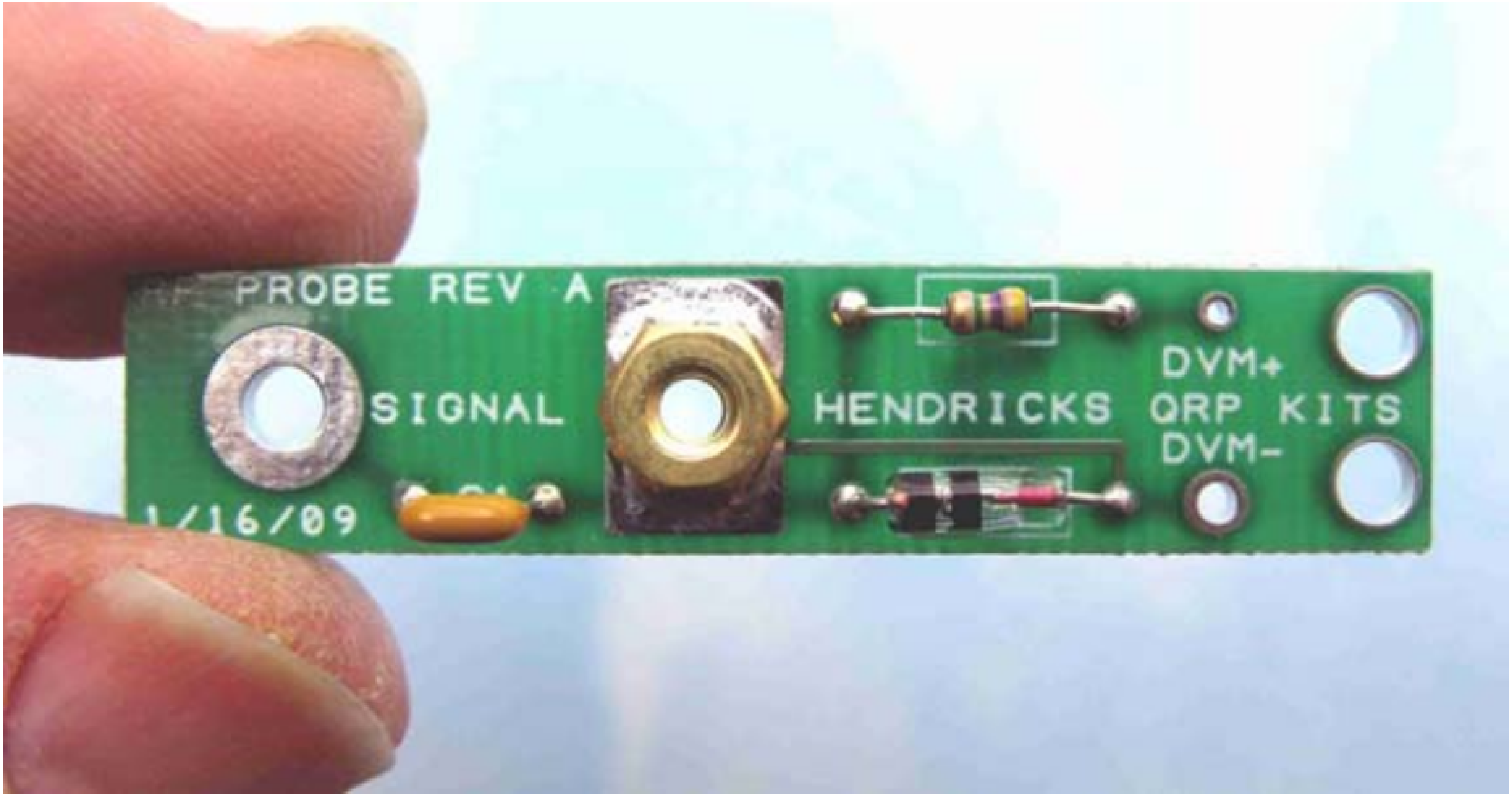


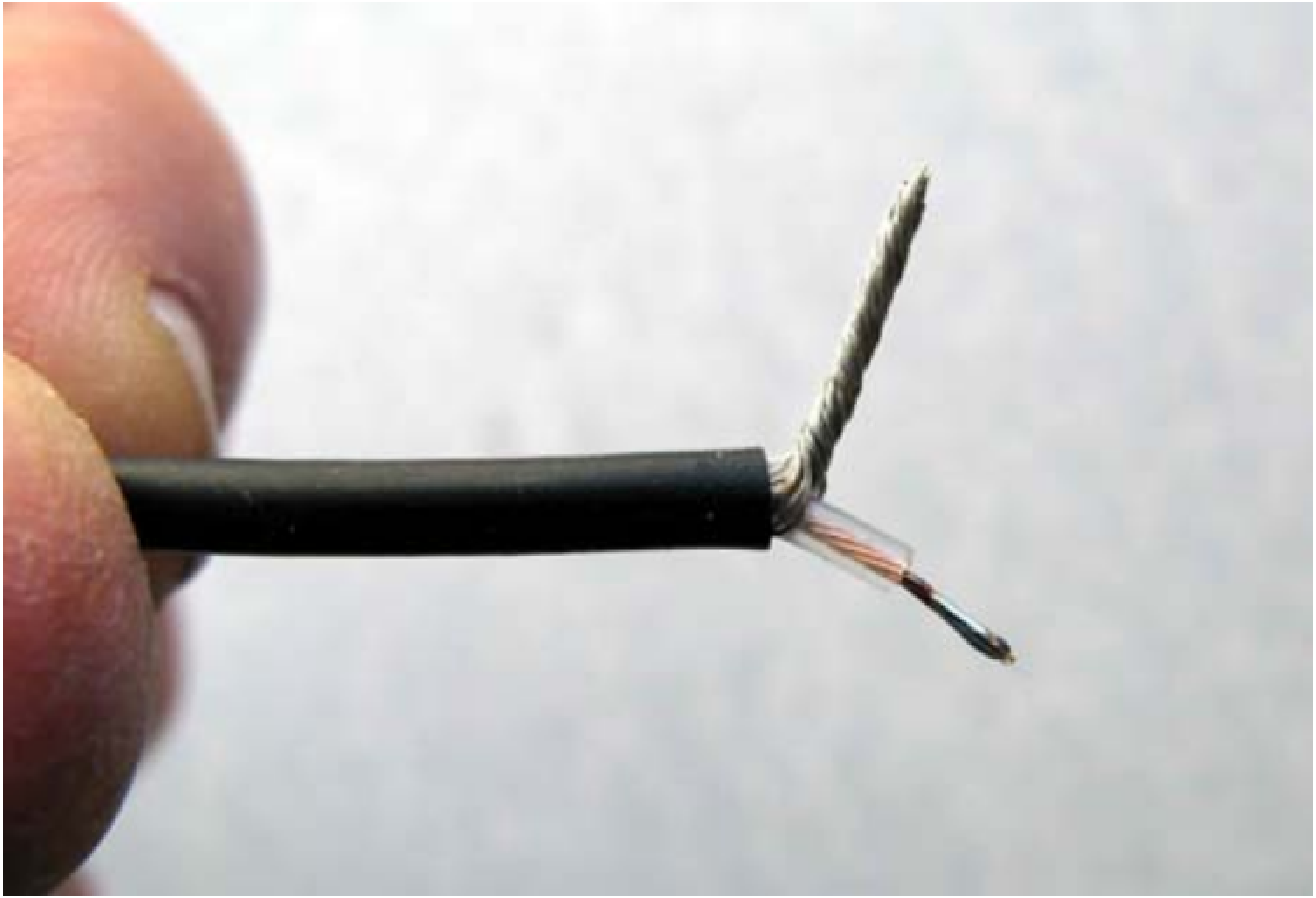


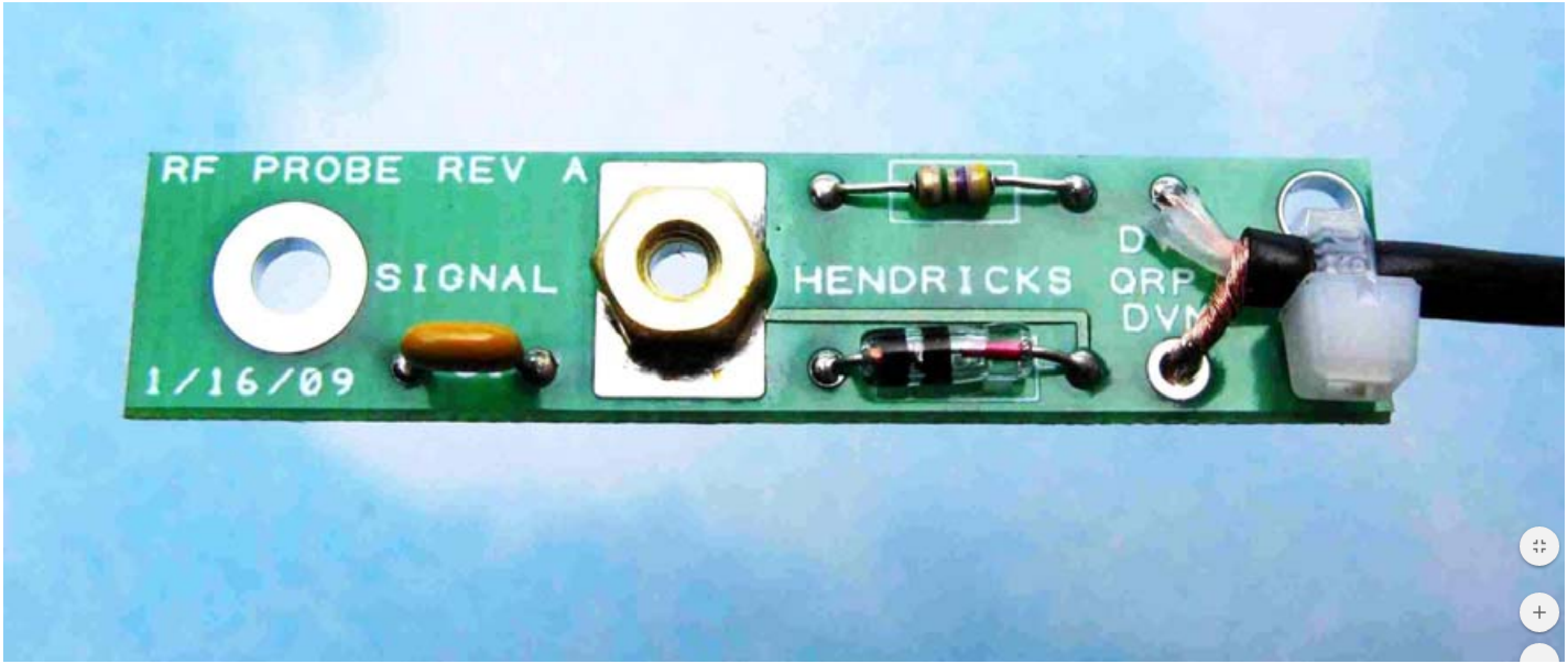
First off, check to see if the parts match the parts list…

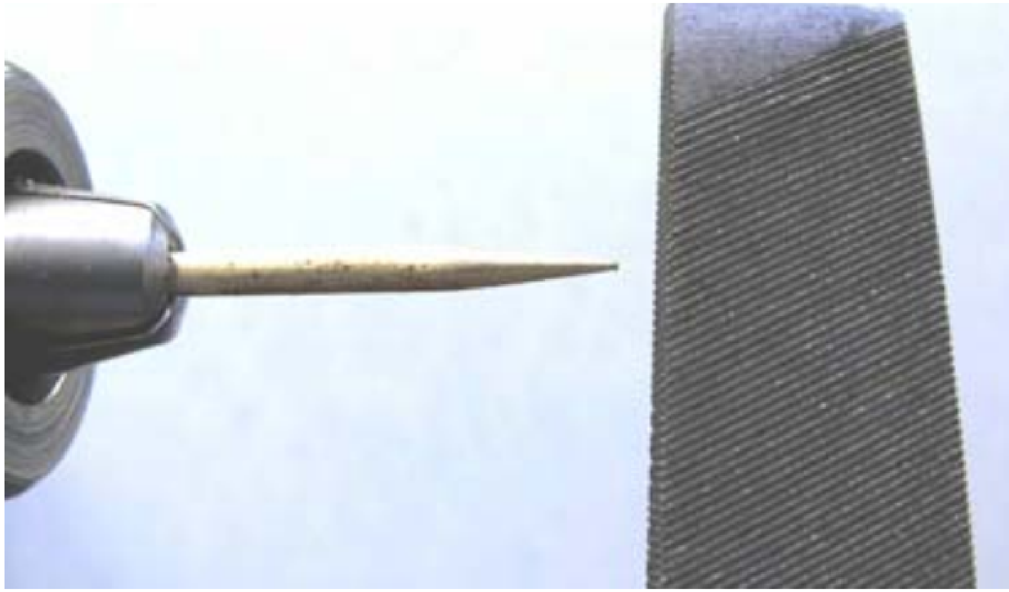
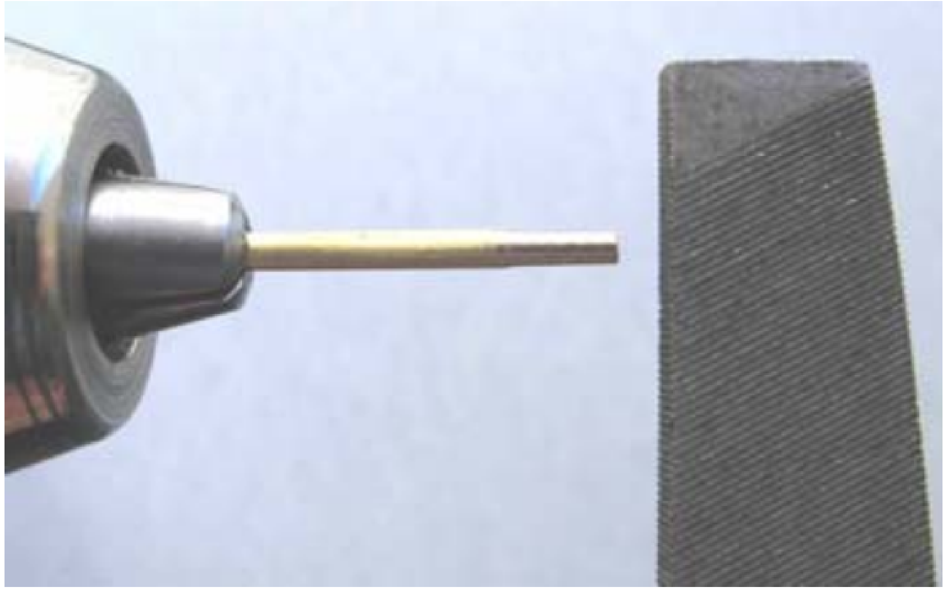
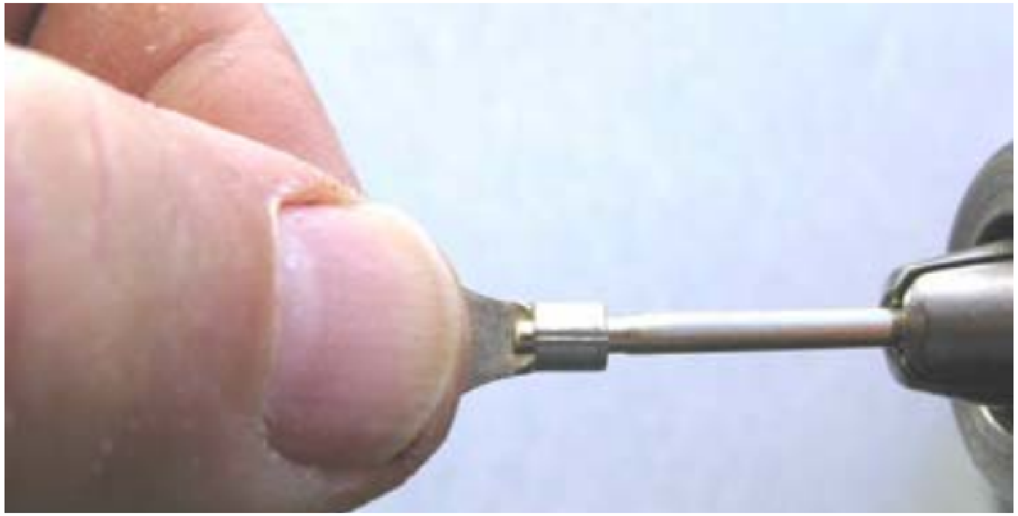
1 – 1/2" x 3" CPVC tube
2 – 5/8" O.D. vinyl caps
1 – 3/32" dia x 2.5" brass rod
1 – 4-40 x 7/16" pan head screw
1 – 4-40 x 1/4" pan head screw
2 - #4 internal tooth lock washer
1 – 4-40 nut, steel
1 – 4-40 nut, brass
1 – 3/32 x 2" tyrap
2 - #4, 14-16ga ring terminal
1 – PCB
1 – D1 - 1N34A diode
1 – R1 - 4.7M 1/8w resistor (YEL, VIO, GRN, GLD) **See note**
1 – C1 - .01 disk ceramic capacitor (103)
3' – RG-174 coax
2 – banana plugs, 1 red, 1 black
2" – 3/16" dia. shrink tubing
1 – alligator clip and 9" lead
1 - copper foil tape, 2.25" x 2"
1 – self adhesive label

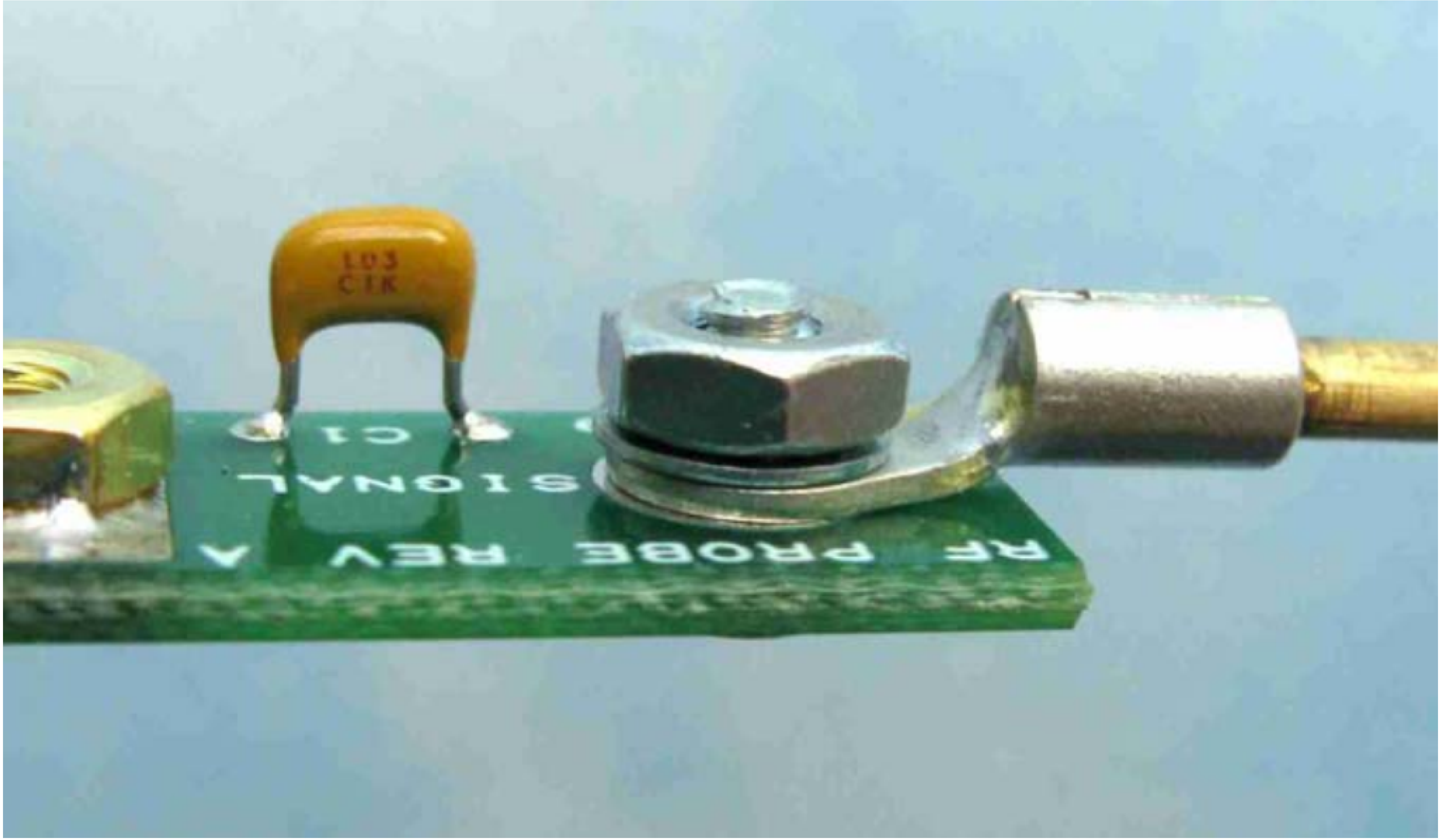

RF PROBE REV A
SIGNAL
C1
R1
HENDRICKS
DVM+
DVM-
D1

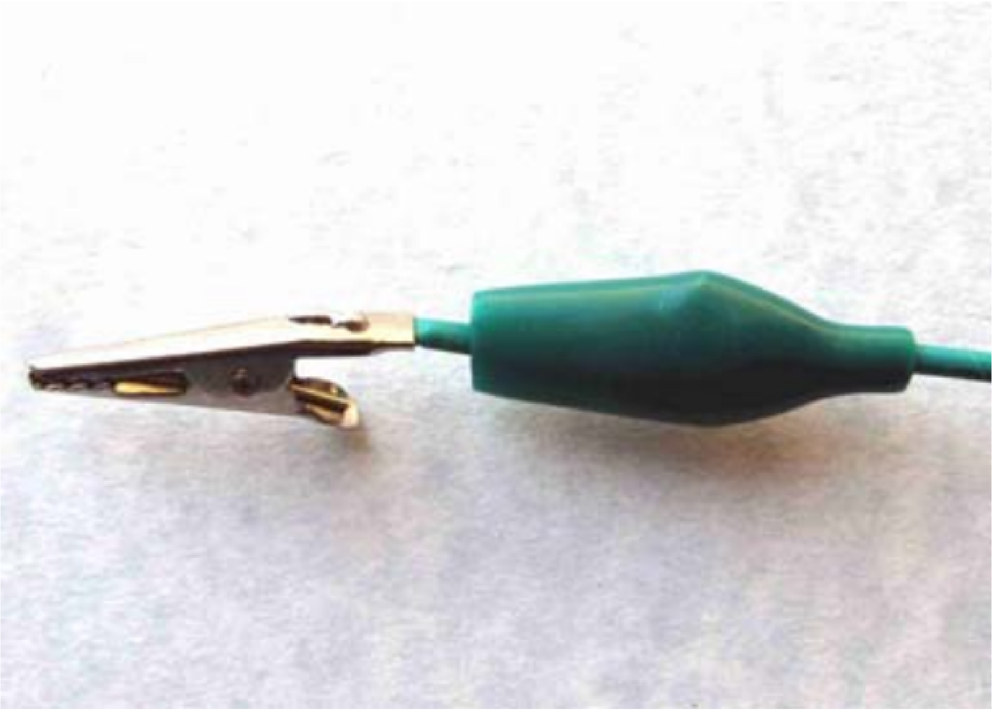

PROBE REV A
SIGNAL
DVM+
HENDRICKS QRP KITS
DVM-
1/16/09

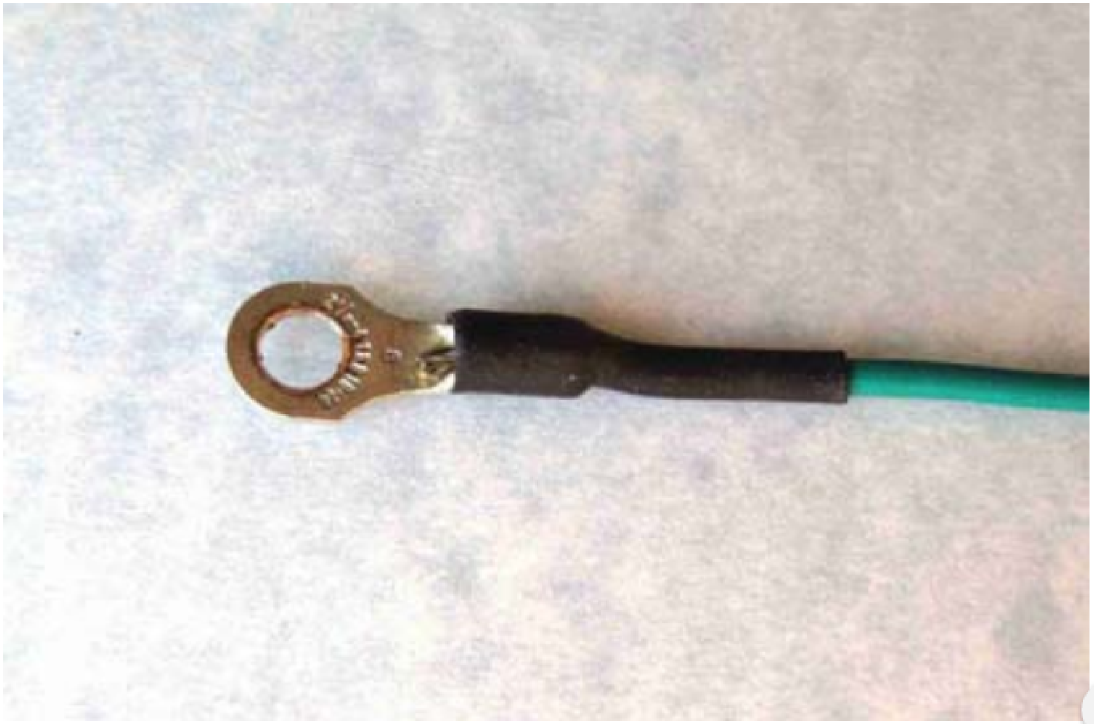



RF PROBE REV A
SIGNAL
1/16/09
HENDRICKS
QRP
DVM

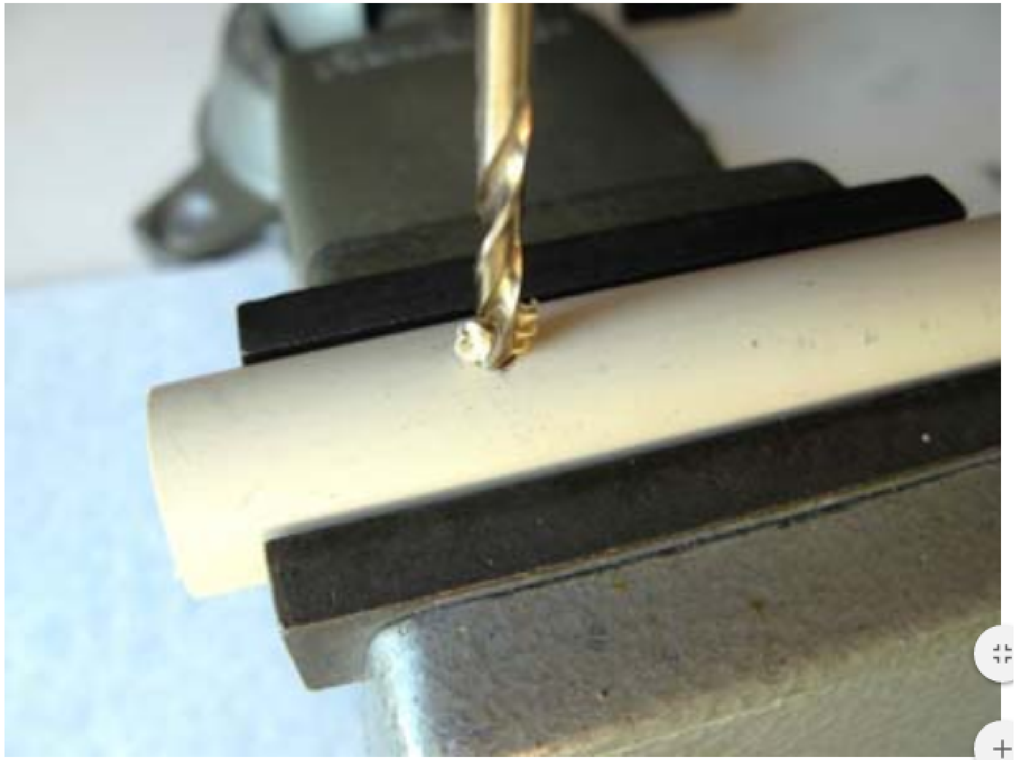




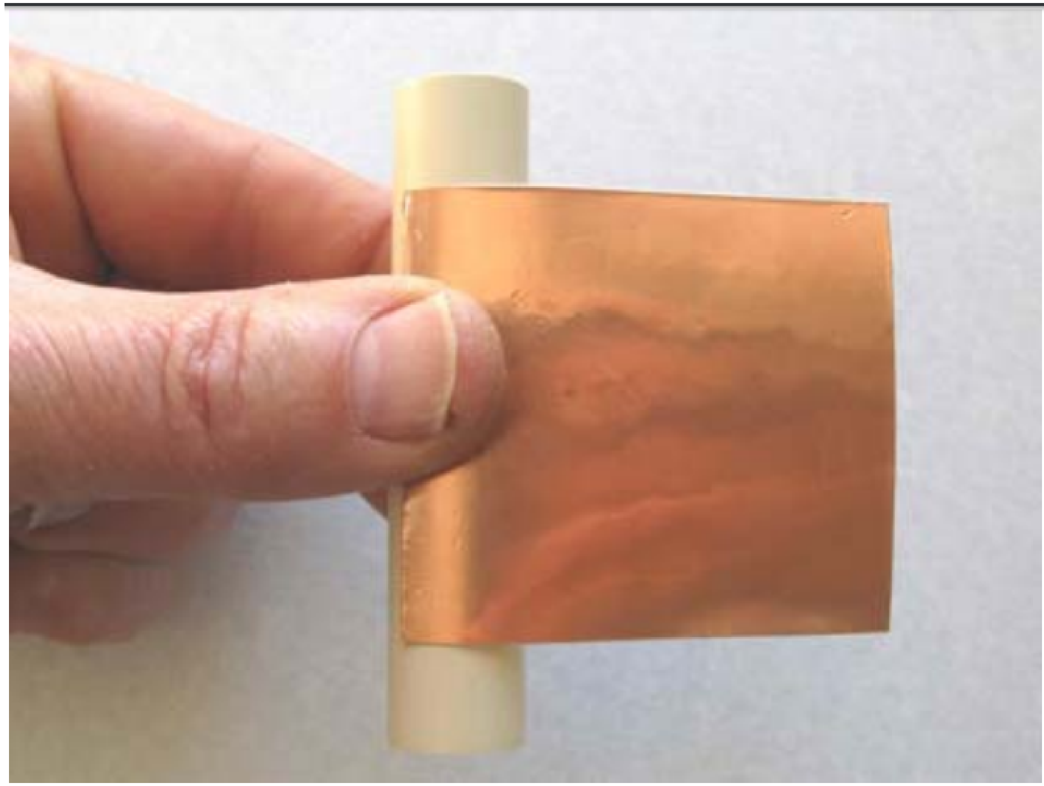
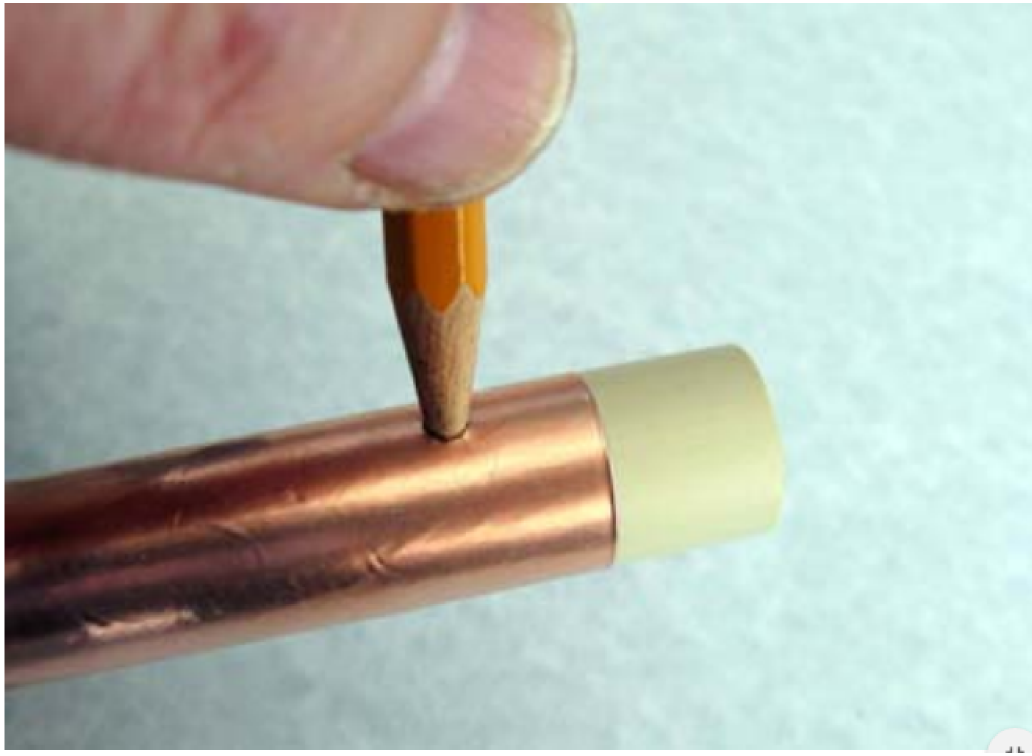


C1
RF PROBE REV A

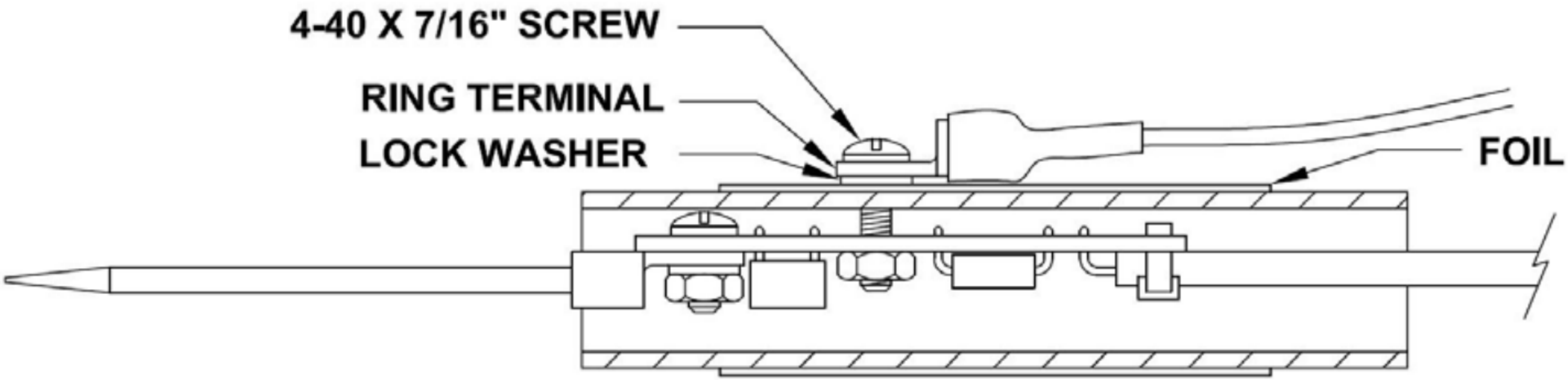


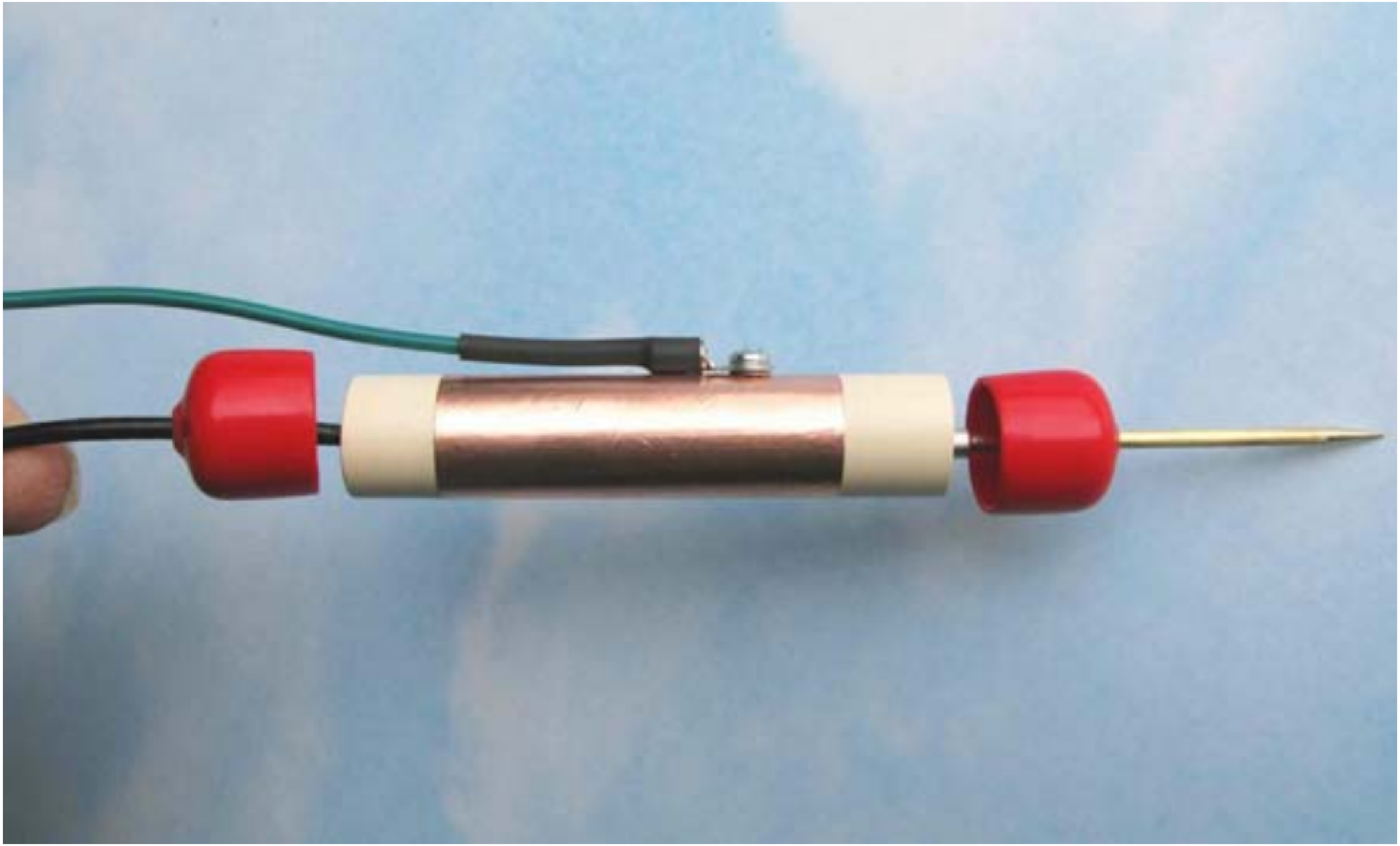


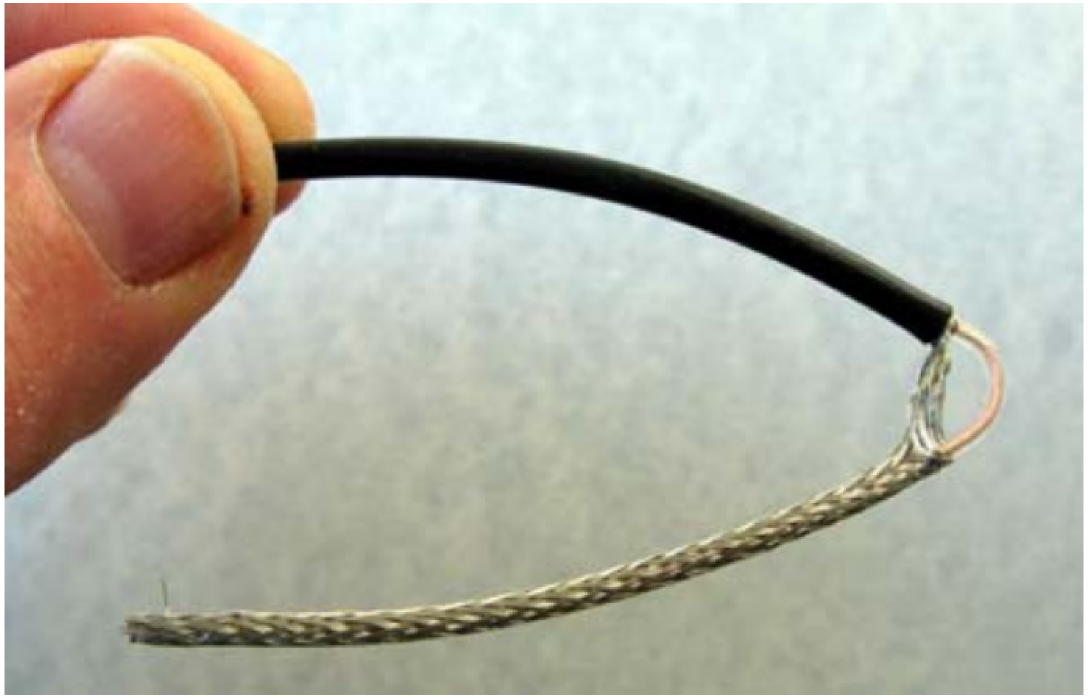

12 ft
1
ft
in
2

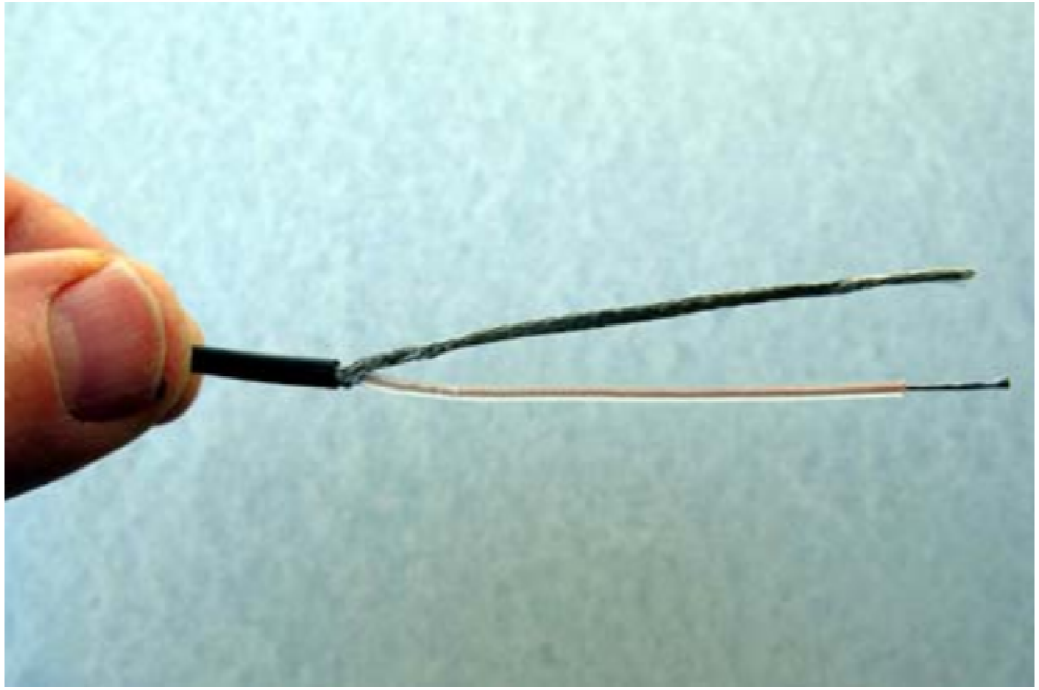


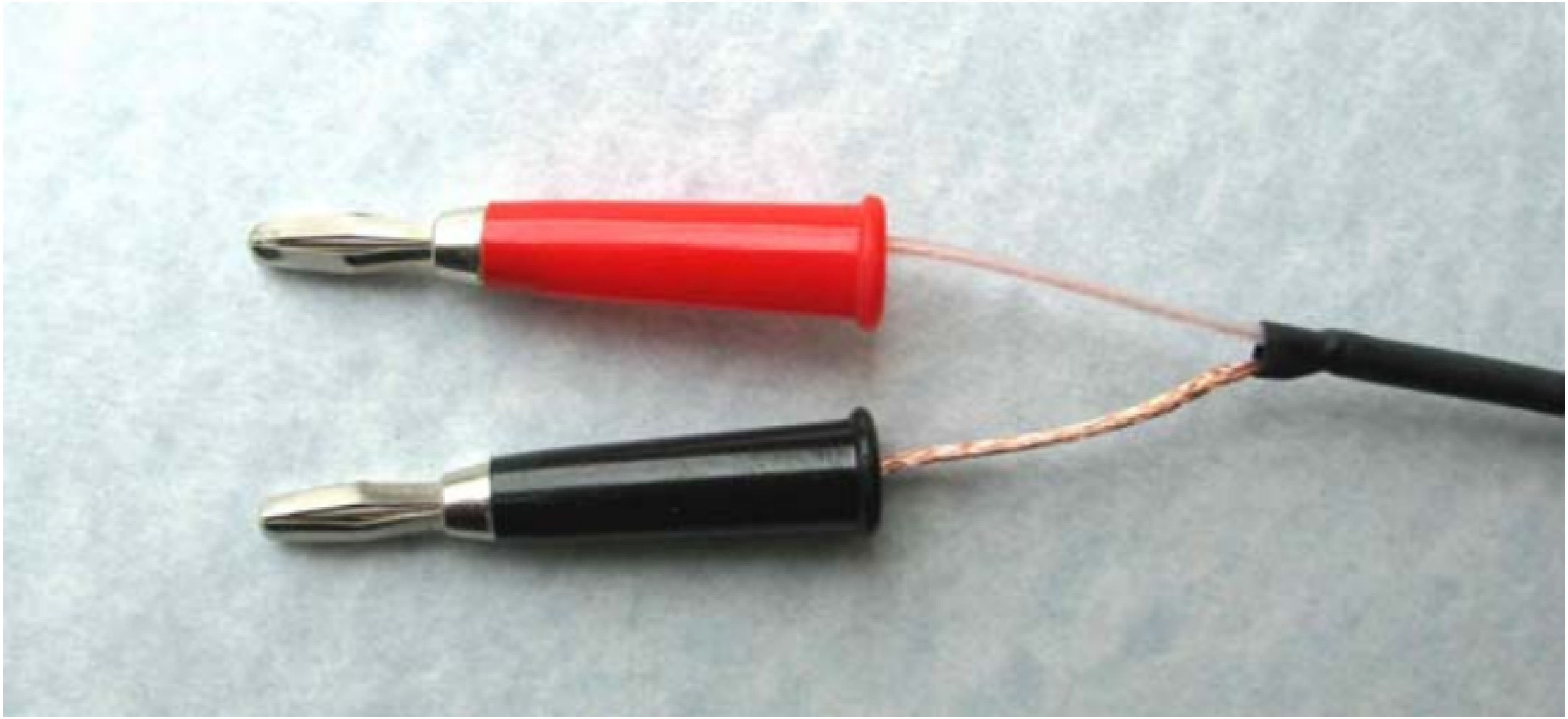



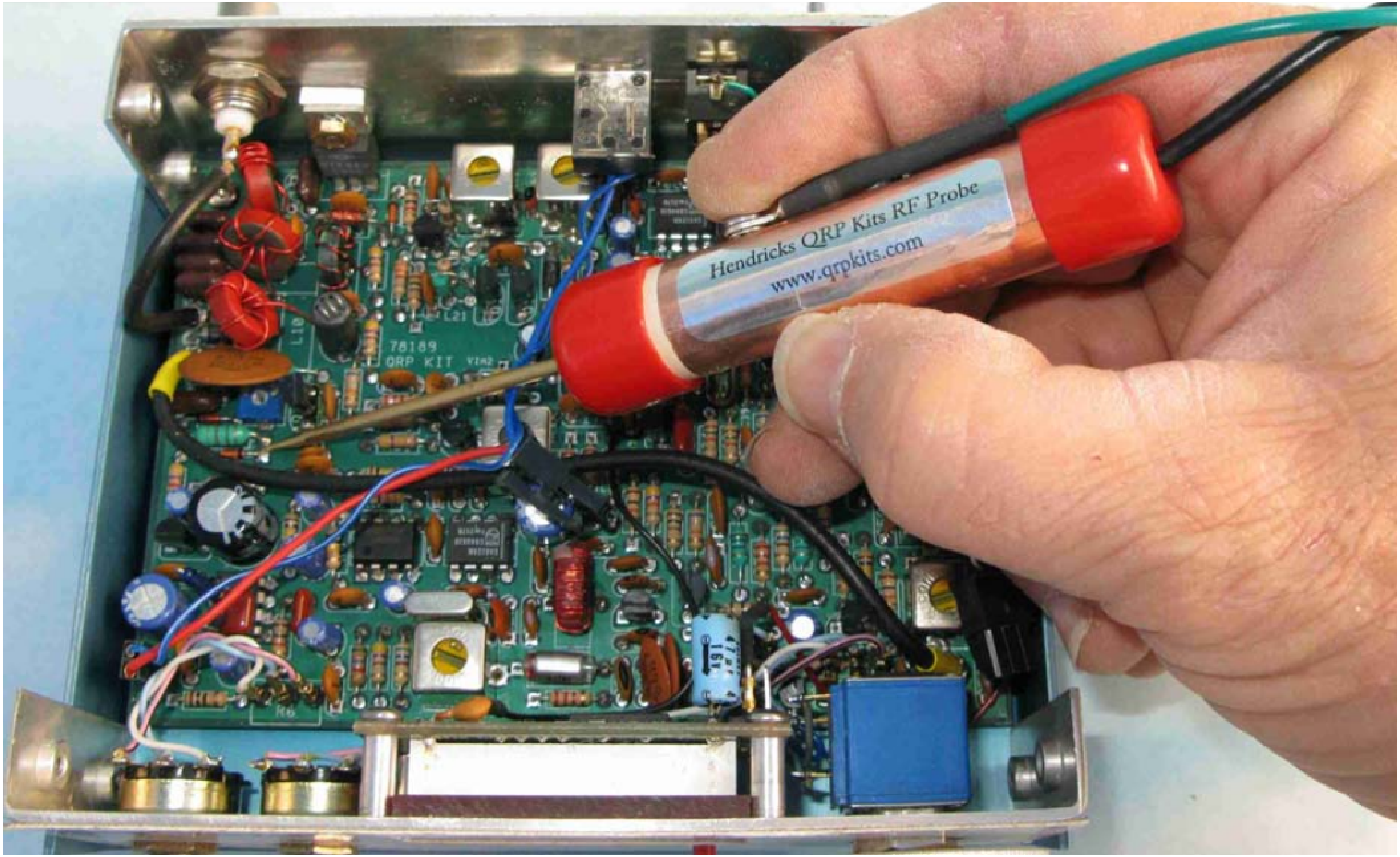

4-40 X 7/16" SCREW
RING TERMINAL
LOCK WASHER
FOIL



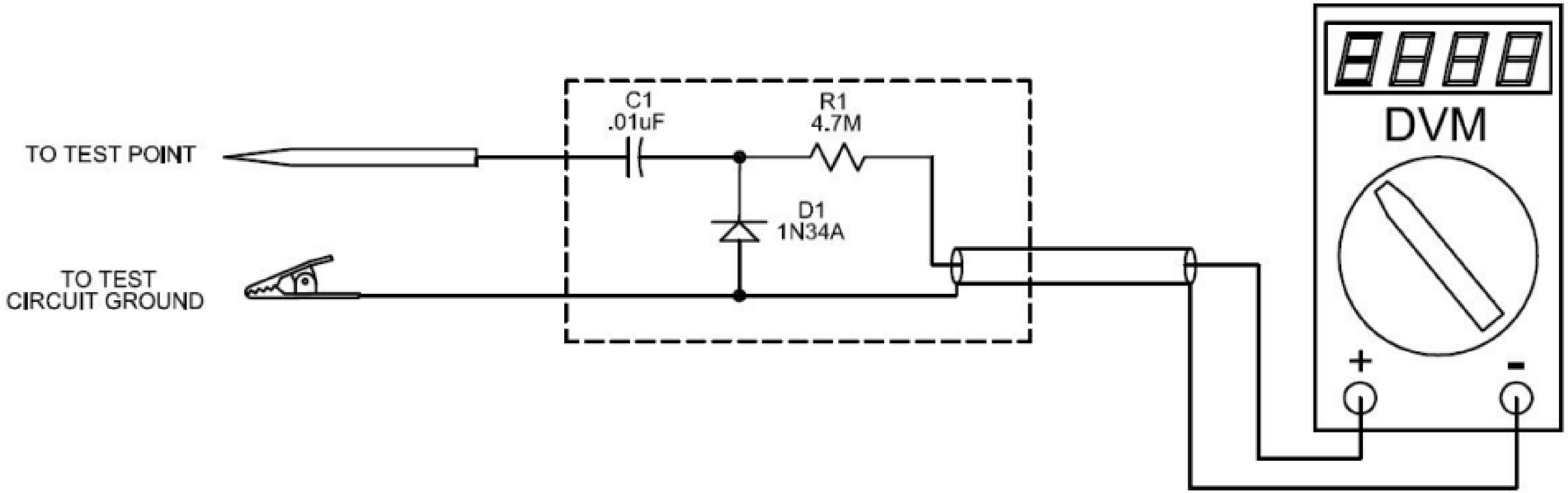




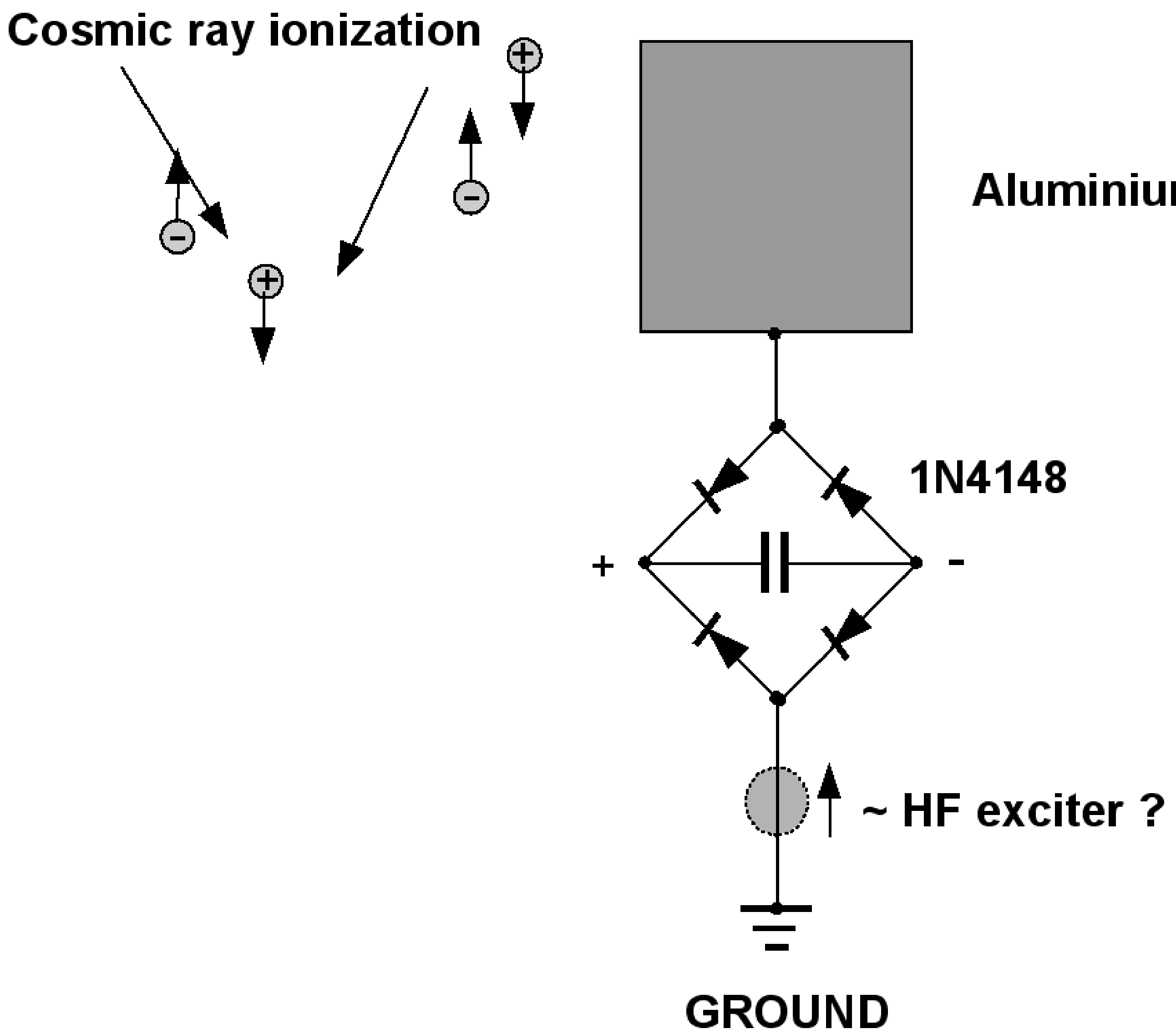


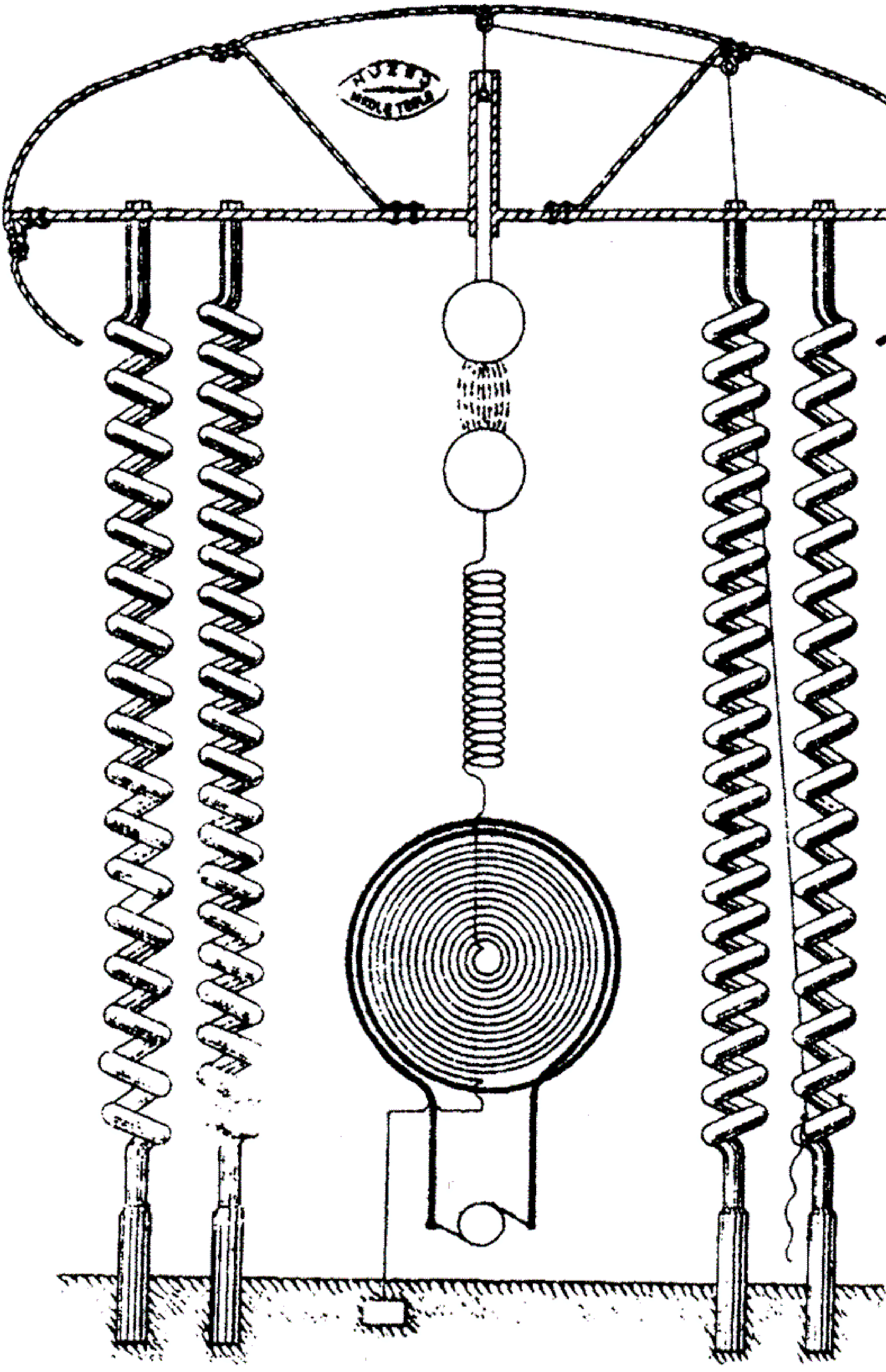

Hendricks QRP Kits RF Probe
www.qrpkits.com
78189
QRP KIT

Look in the files section for **Dar's (Darwin Piatt) – W9HZC** application and usage tips for the R.F. Probe.

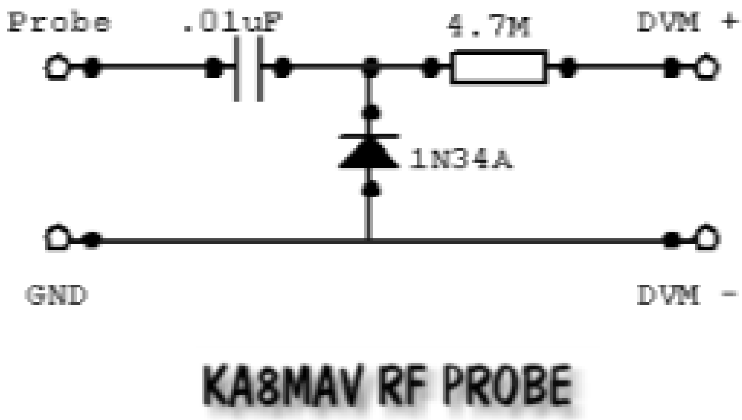


ELECTRIC ENERGY FROM SPACE:





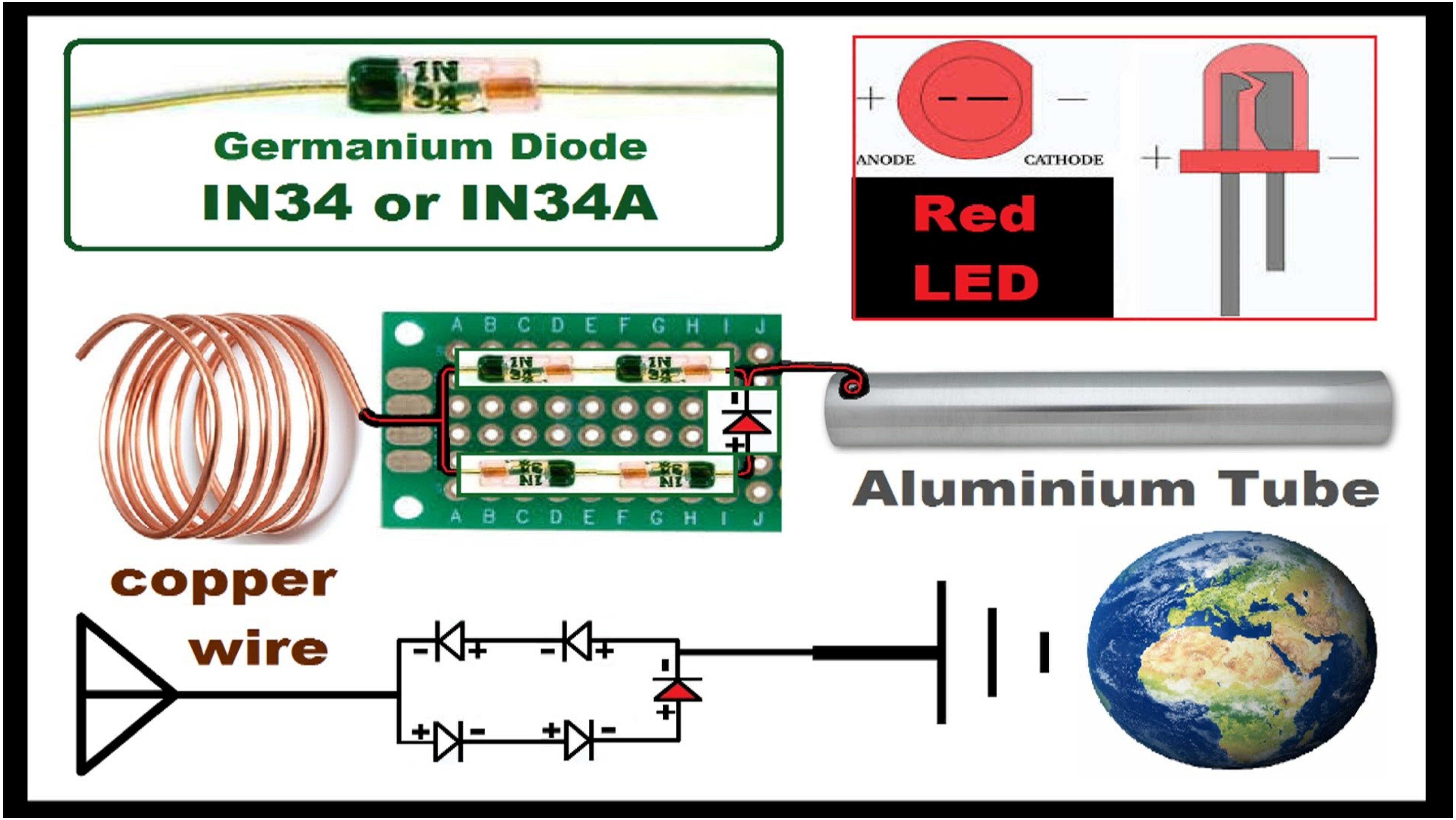
RF tip for Multimeter and Oscilloscope



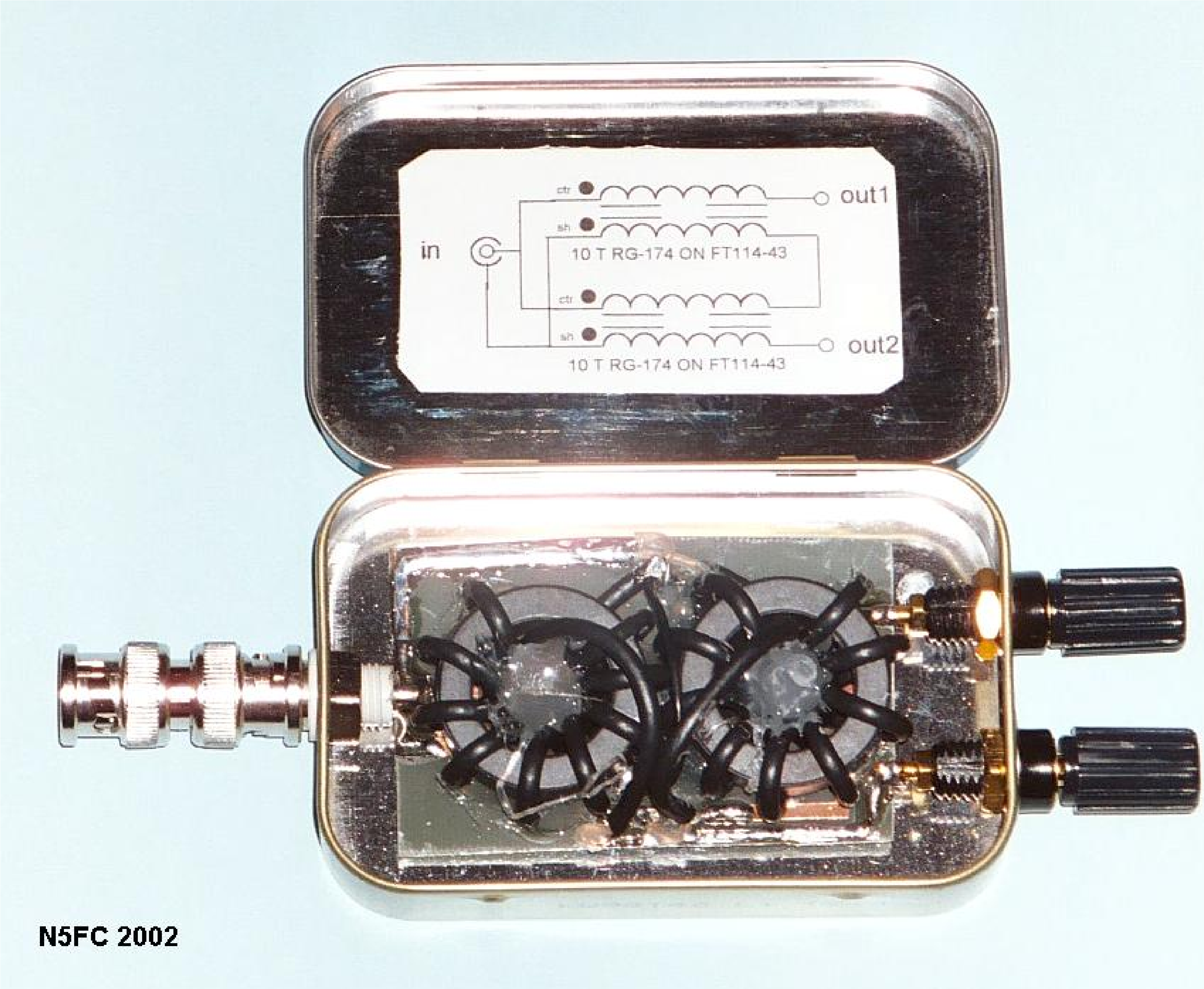
The project **RF tip** is simple, not need special components and there is no great difficulty in its construction, making it ideal for beginners. The creator of this tip was the amateur KA8MAV, hence the name of the tip arose. Above the electronic circuit probe.

List of components for the tip RF

1 Germanium diode OA79, 1N34 or equivalent
1 Capacitor 0.01uF
1 Resistor 4M7 x 1/4 Watts

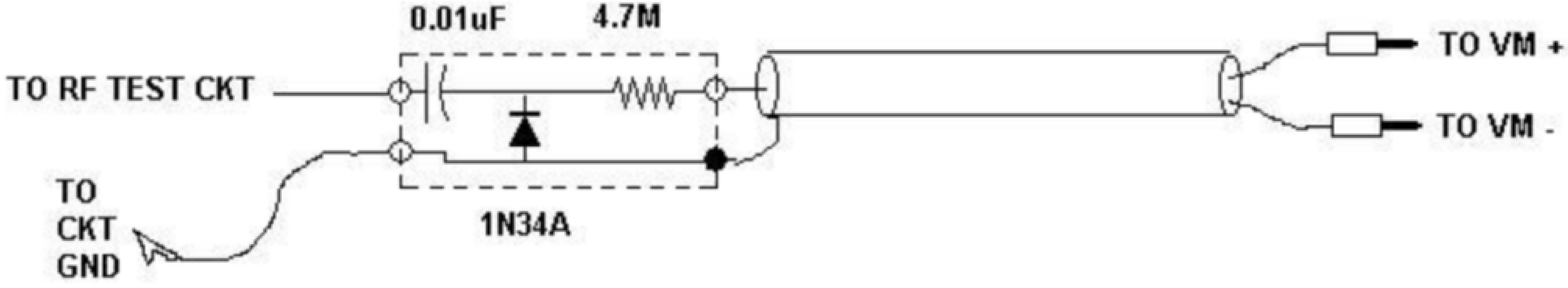

Germanium Diode
IN34 or IN34A
ANODE
CATHODE
Red
LED
A B C D E F G H I J
Aluminium Tube
copper
wire

N5FC 2002


ctr
out1
sh
in
10 T RG-174 ON FT114-43
ctr
sh
out2
10 T RG-174 ON FT114-43

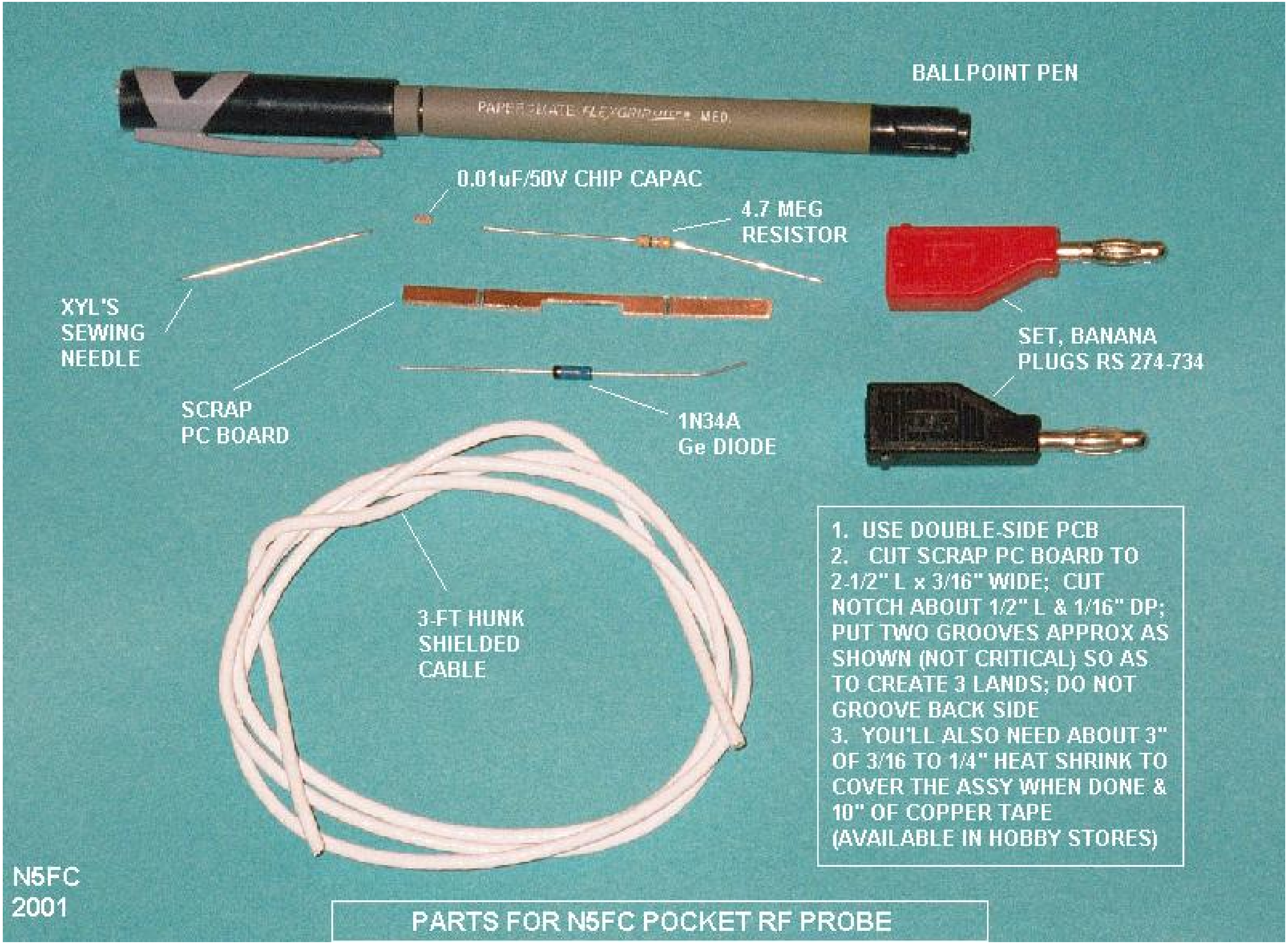
N5FC 2002

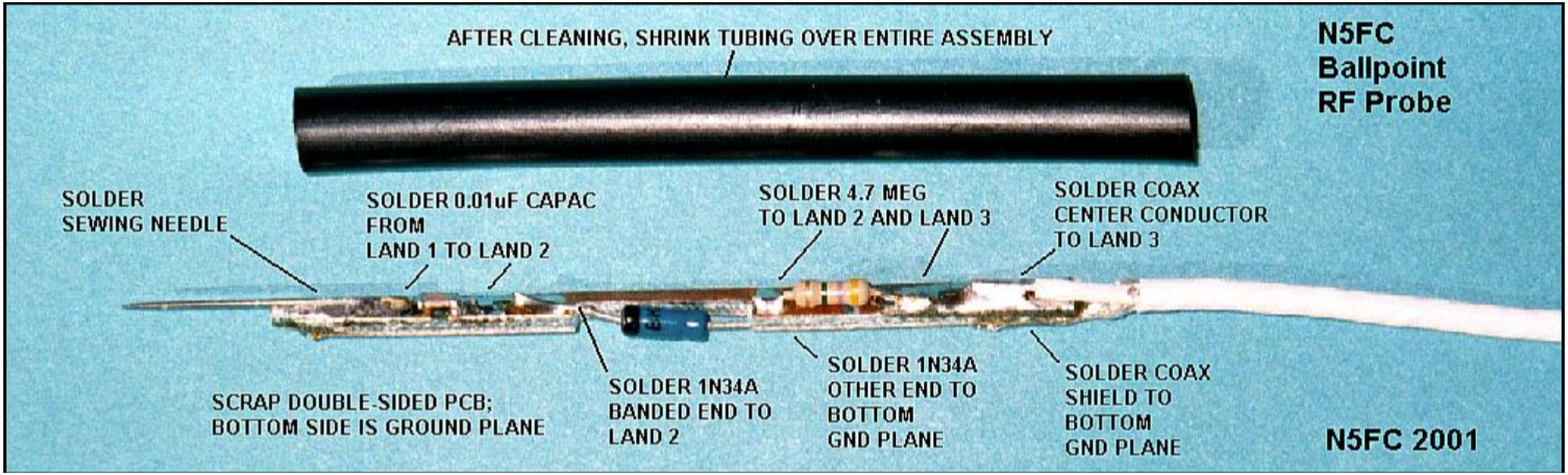
N5FC 2001



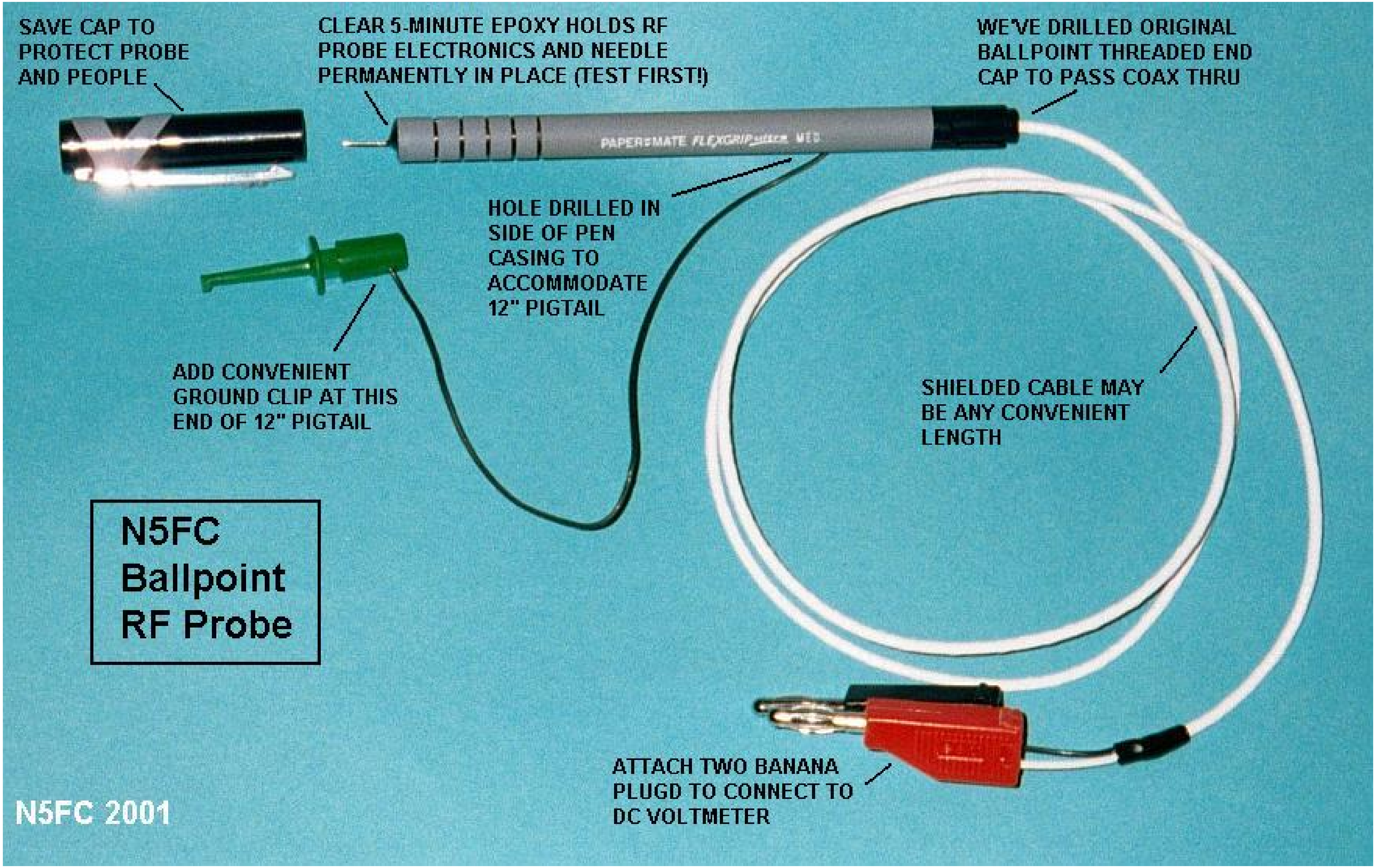
CLASSIC RF PROBE

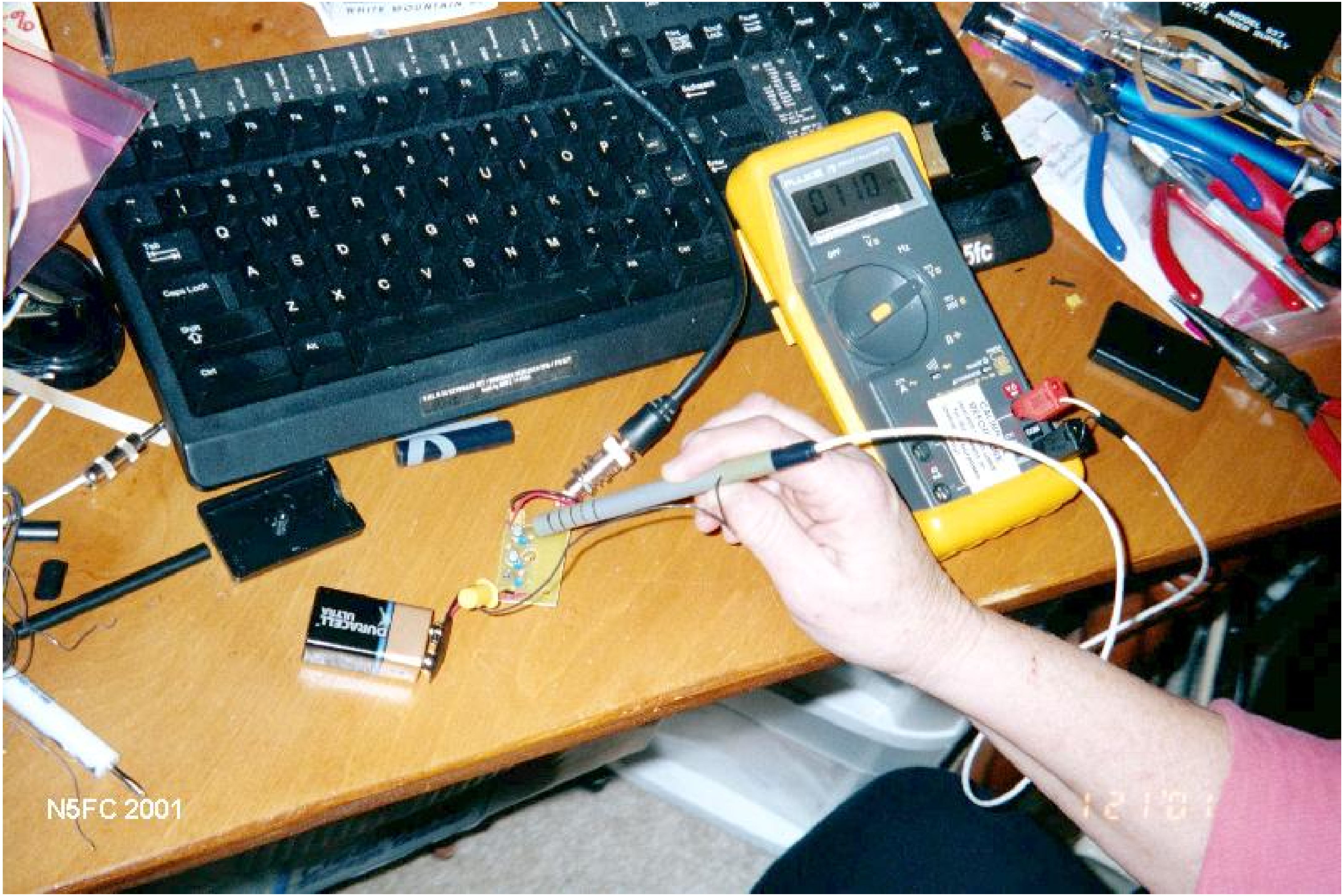
Reads RMS Equivalent Voltage in test circuit, if Voltmeter is 10 -11 Meg Input Impedance;
Reads 4X RMS Equiv Voltage if VM is 1Meg Input Impedance (Set VM to measure DCV)


BALLPOINT PEN
PAPERMATE FLEXGRIP MED.
0.01uF/50V CHIP CAPAC
4.7 MEG
RESISTOR
XYL'S
SEWING
NEEDLE
SET, BANANA
PLUGS RS 274-734
SCRAP
PC BOARD
1N34A
Ge DIODE
3-FT HUNK
SHIELDED
CABLE
1. USE DOUBLE-SIDE PCB
2. CUT SCRAP PC BOARD TO 2-1/2" L x 3/16" WIDE; CUT NOTCH ABOUT 1/2" L & 1/16" DP; PUT TWO GROOVES APPROX AS SHOWN (NOT CRITICAL) SO AS TO CREATE 3 LANDS; DO NOT GROOVE BACK SIDE
3. YOU'LL ALSO NEED ABOUT 3" OF 3/16 TO 1/4" HEAT SHRINK TO COVER THE ASSY WHEN DONE & 10" OF COPPER TAPE (AVAILABLE IN HOBBY STORES)
N5FC
2001
PARTS FOR N5FC POCKET RF PROBE

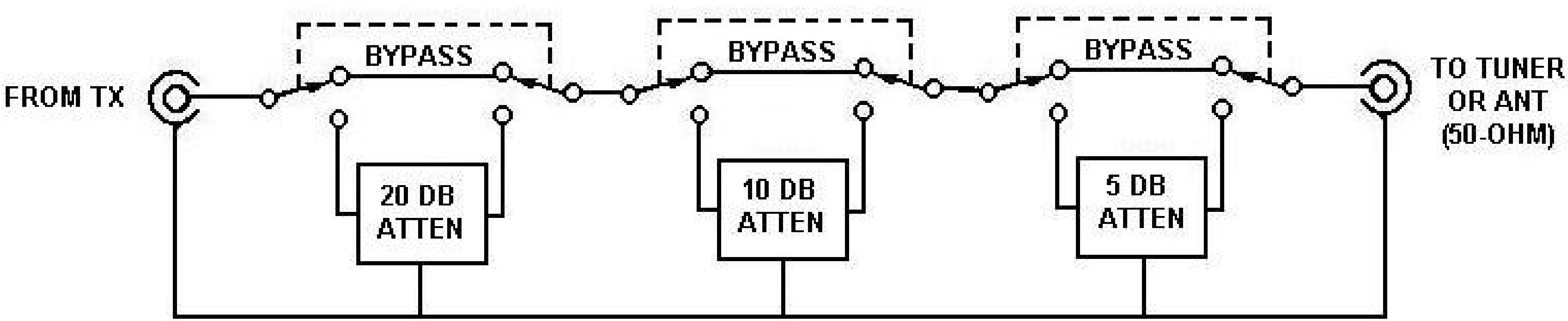

AFTER CLEANING, SHRINK TUBING OVER ENTIRE ASSEMBLY
N5FC
Ballpoint
RF Probe
SOLDER
SEWING NEEDLE
SOLDER 0.01uF CAPAC
FROM
LAND 1 TO LAND 2
SOLDER 4.7 MEG
TO LAND 2 AND LAND 3
SOLDER COAX
CENTER CONDUCTOR
TO LAND 3
SCRAP DOUBLE-SIDED PCB;
BOTTOM SIDE IS GROUND PLANE
SOLDER 1N34A
BANDED END TO
LAND 2
SOLDER 1N34A
OTHER END TO
BOTTOM
GND PLANE
SOLDER COAX
SHIELD TO
BOTTOM
GND PLANE
N5FC 2001


Wrap adhesive-backed copper foil round-and-round to build shield over heat shrink-covered RF probe assembly; check for shorts
Ballpoint Pen Casing (Tip & ink tube discarded; but saved screw-on cap at rear of pen)
When complete, pull assembly back into ballpoint casing, leaving needle sticking out about 1/2 inch.
N5FC Ballpoint RF Probe
12" Wire pigtail from ground plane of RF probe PCB solders to copper taper and continues back through pen casing (alongside 3-ft shielded coax)
N5FC 2001

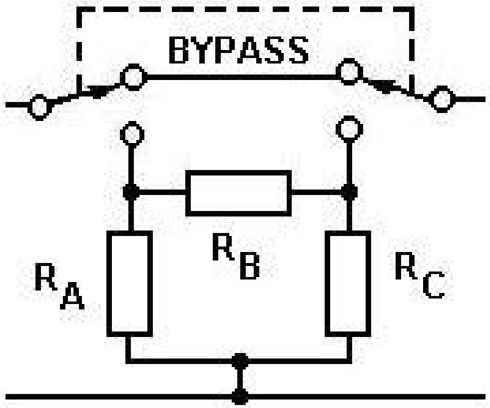

SAVE CAP TO PROTECT PROBE AND PEOPLE
CLEAR 5-MINUTE EPOXY HOLDS RF PROBE ELECTRONICS AND NEEDLE PERMANENTLY IN PLACE (TEST FIRST!)
WE'VE DRILLED ORIGINAL BALLPOINT THREADED END CAP TO PASS COAX THRU
PAPER MATE FLEXGRIP MED
HOLE DRILLED IN SIDE OF PEN CASING TO ACCOMMODATE 12" PIGTAIL
ADD CONVENIENT GROUND CLIP AT THIS END OF 12" PIGTAIL
SHIELDED CABLE MAY BE ANY CONVENIENT LENGTH
N5FC Ballpoint RF Probe
ATTACH TWO BANANA PLUGD TO CONNECT TO DC VOLTMETER
N5FC 2001


N5FC 2001
1 21 01
DURACELL ULTRA


N5FC 4-2001
N5FC
0-5-10-15-20-25-30-35 DB
5-Watt Attenuator
ATU
IN
5 DB
OUT
IN
10 DB
OUT
IN
20 DB
OUT
TX



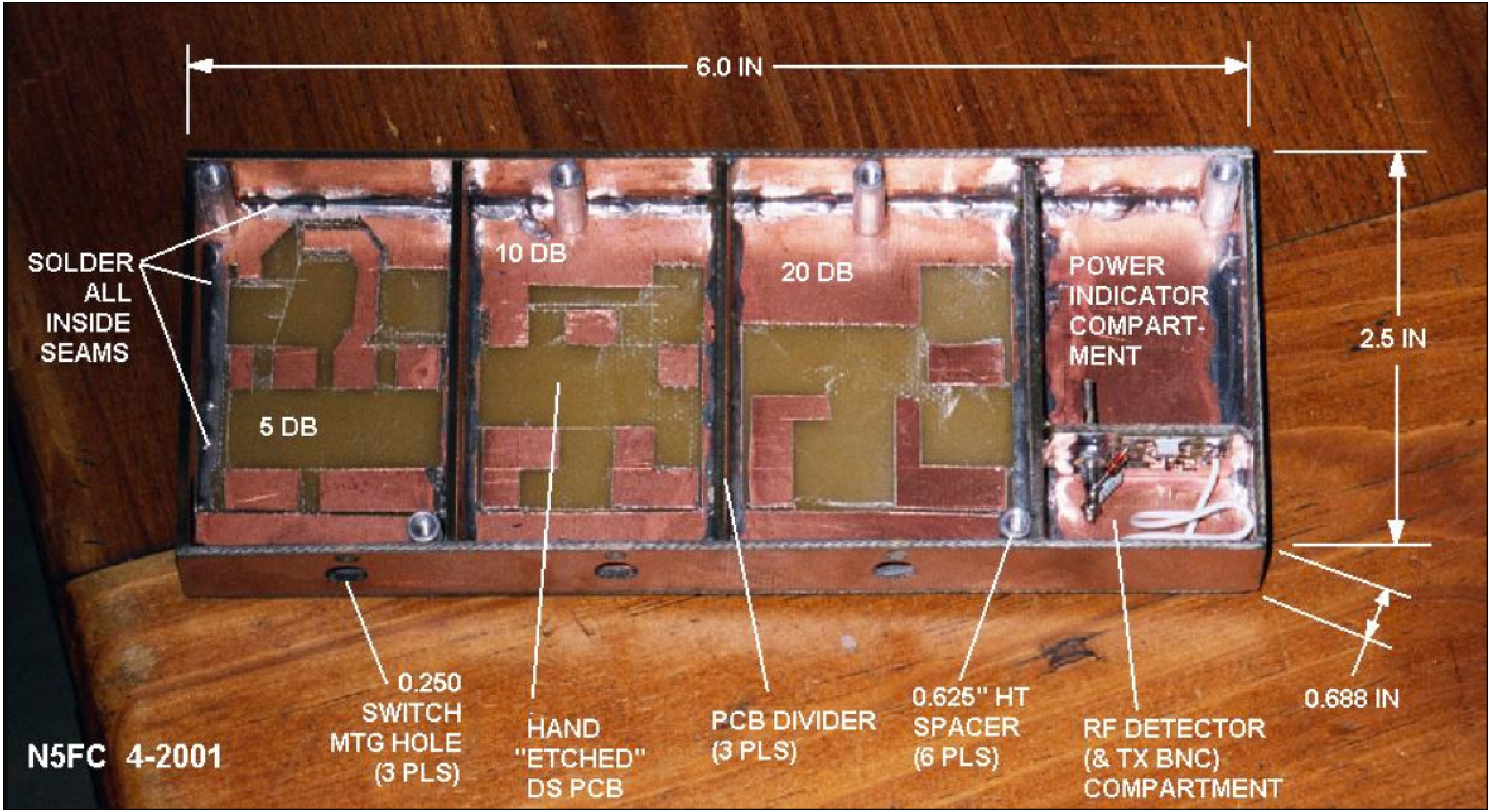
N5FC QRP Switchable 0-5-10-15-20-25-30-35 db Attenuator

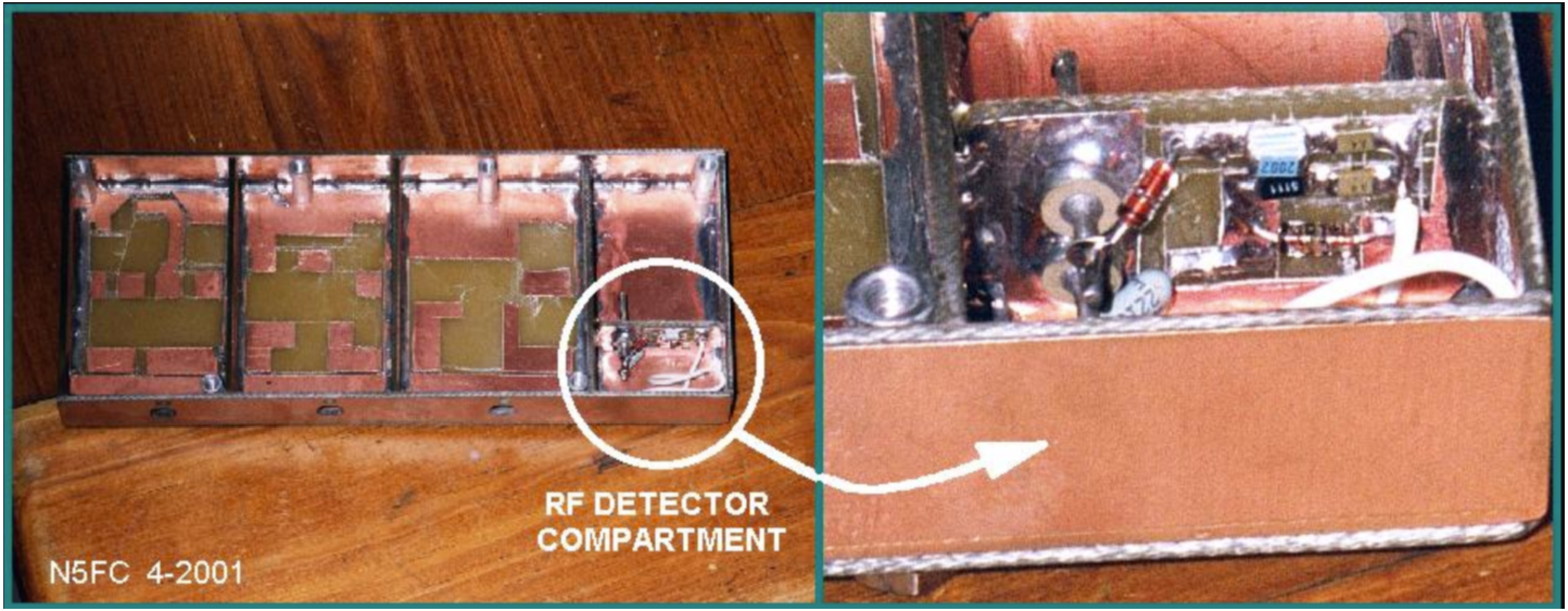


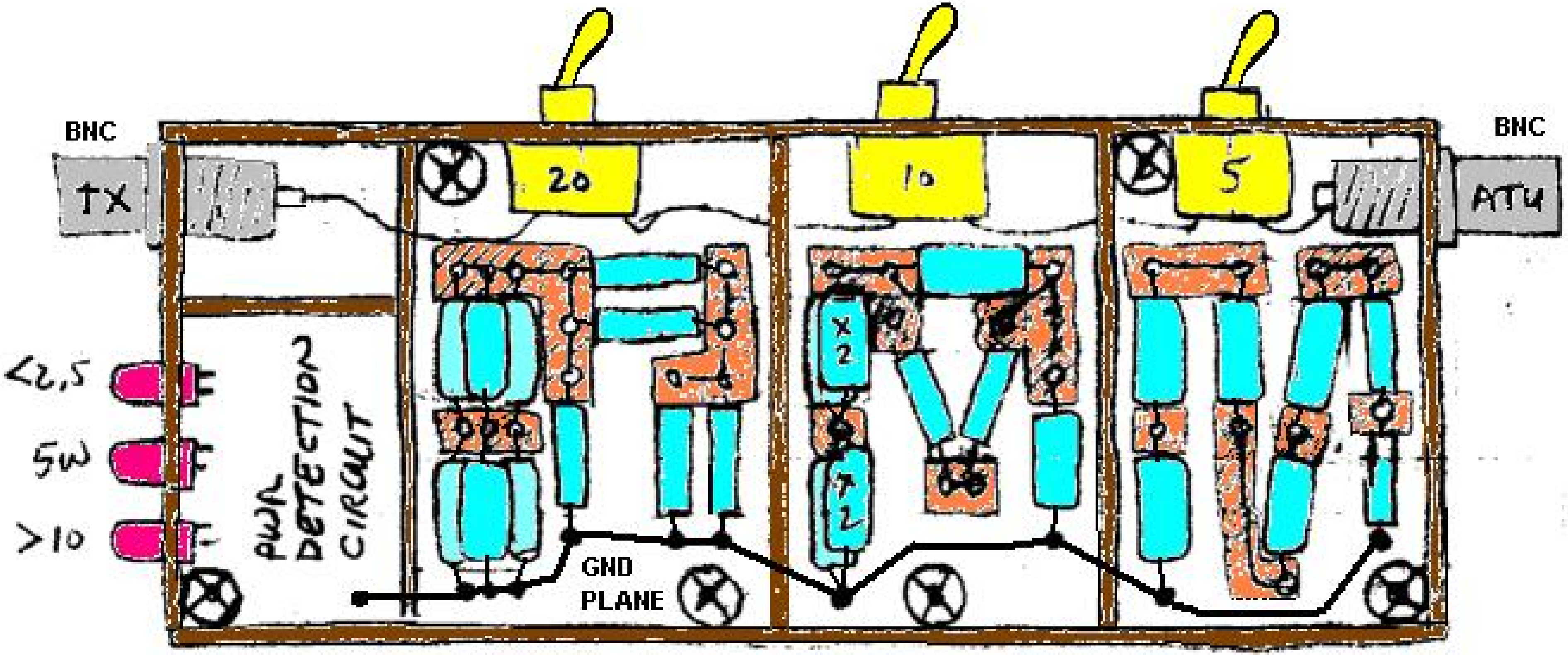
ATTENUATOR SECTION CIRCUIT

		NOM'L	ACT'L	IMPLEMENT WITH
20 db (NOM) ACT=19.7db	R_A	61.1	67	6 ea 100/1W SERIES-PAR'L & 1K PAR'L
	R_B	247.5	235	2 ea 470 / 0.5W IN PARALLEL
	R_C	61.1	62	68/0.5W IN PAR'L with 680/0.5W
10 db (NOM) ACT = 9.7 db	R_A	96.2	100	4 ea 100/1W in SERIES-PARALLEL
	R_B	71.2	67	100/1W IN PAR'L w: 2 ea 100/.5W IN SER
	R_C	96.2	100	100/0.5W
5 db (NOM) ACT = 4.9 db	R_A	247.5	200	2 ea 100/1W IN SERIES
	R_B	30.4	30	3 ea 10/1W IN SERIES
	R_C	247.5	200	2 ea 100/0.5W IN SERIES

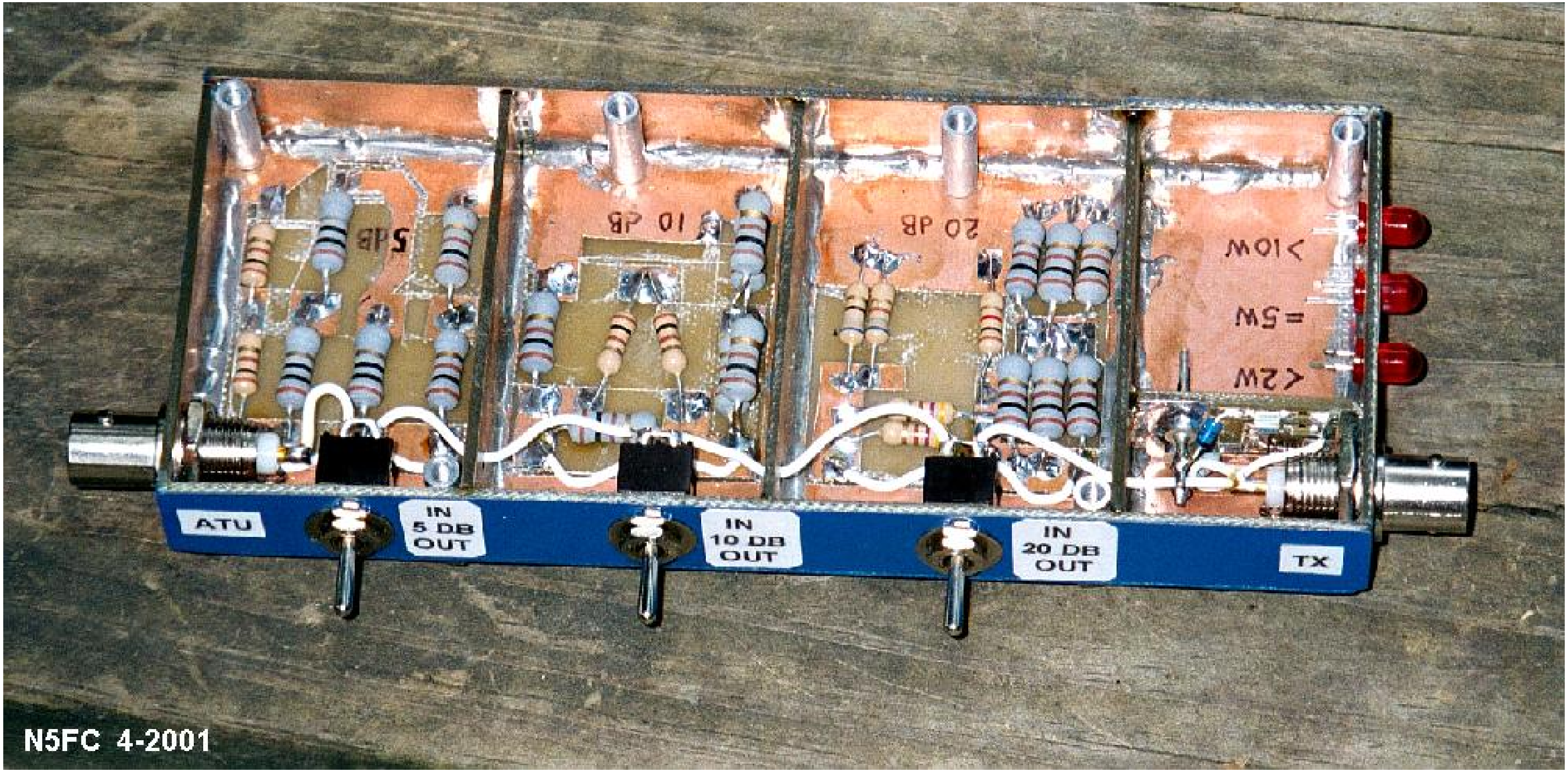
N5FC 4-2001

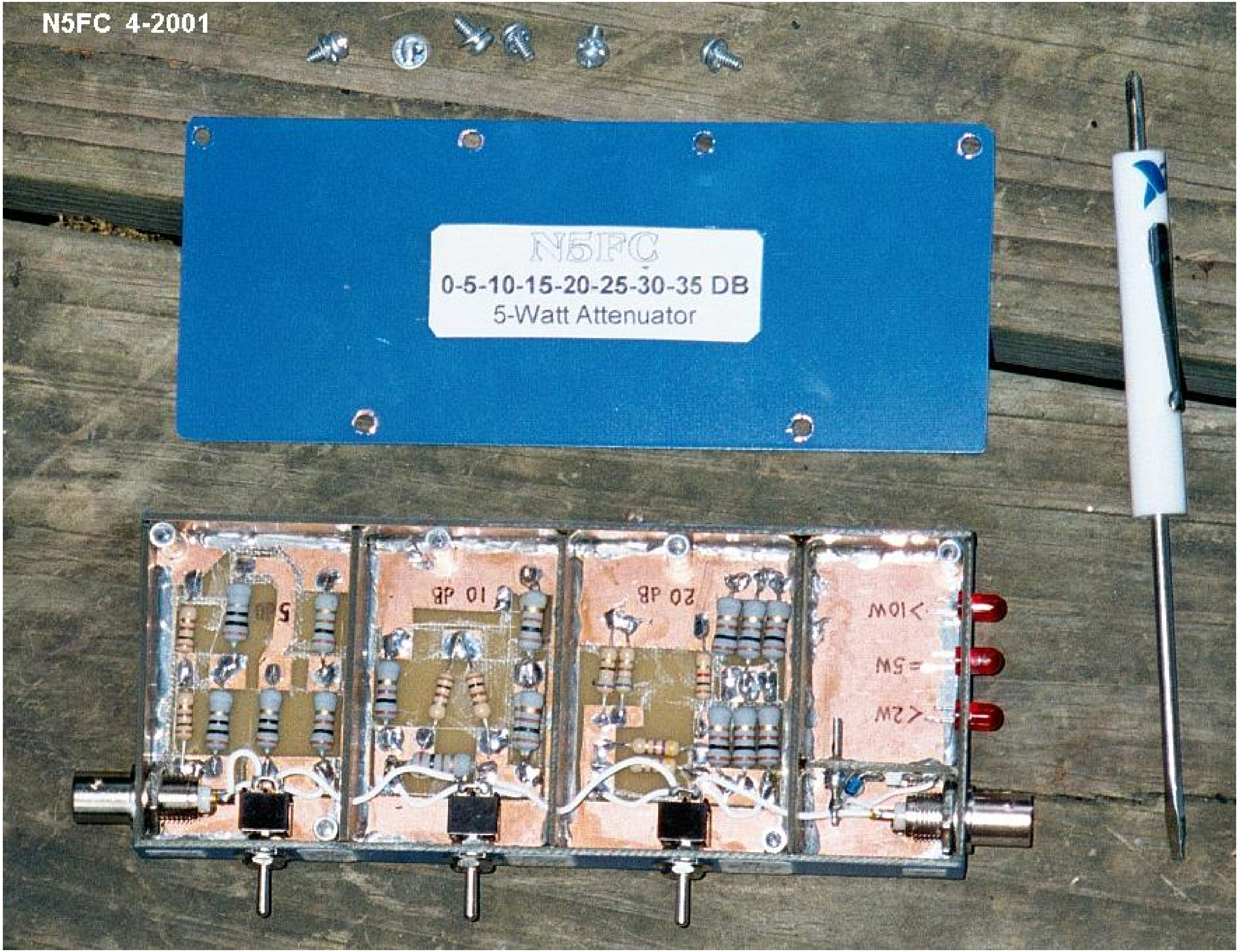

6.0 IN
SOLDER ALL INSIDE SEAMS
10 DB
20 DB
POWER INDICATOR COMPART- MENT
2.5 IN
5 DB
0.688 IN
0.250 SWITCH MTG HOLE (3 PLS)
HAND "ETCHED" DS PCB
PCB DIVIDER (3 PLS)
0.625'' HT SPACER (6 PLS)
RF DETECTOR (& TX BNC) COMPARTMENT
N5FC 4-2001

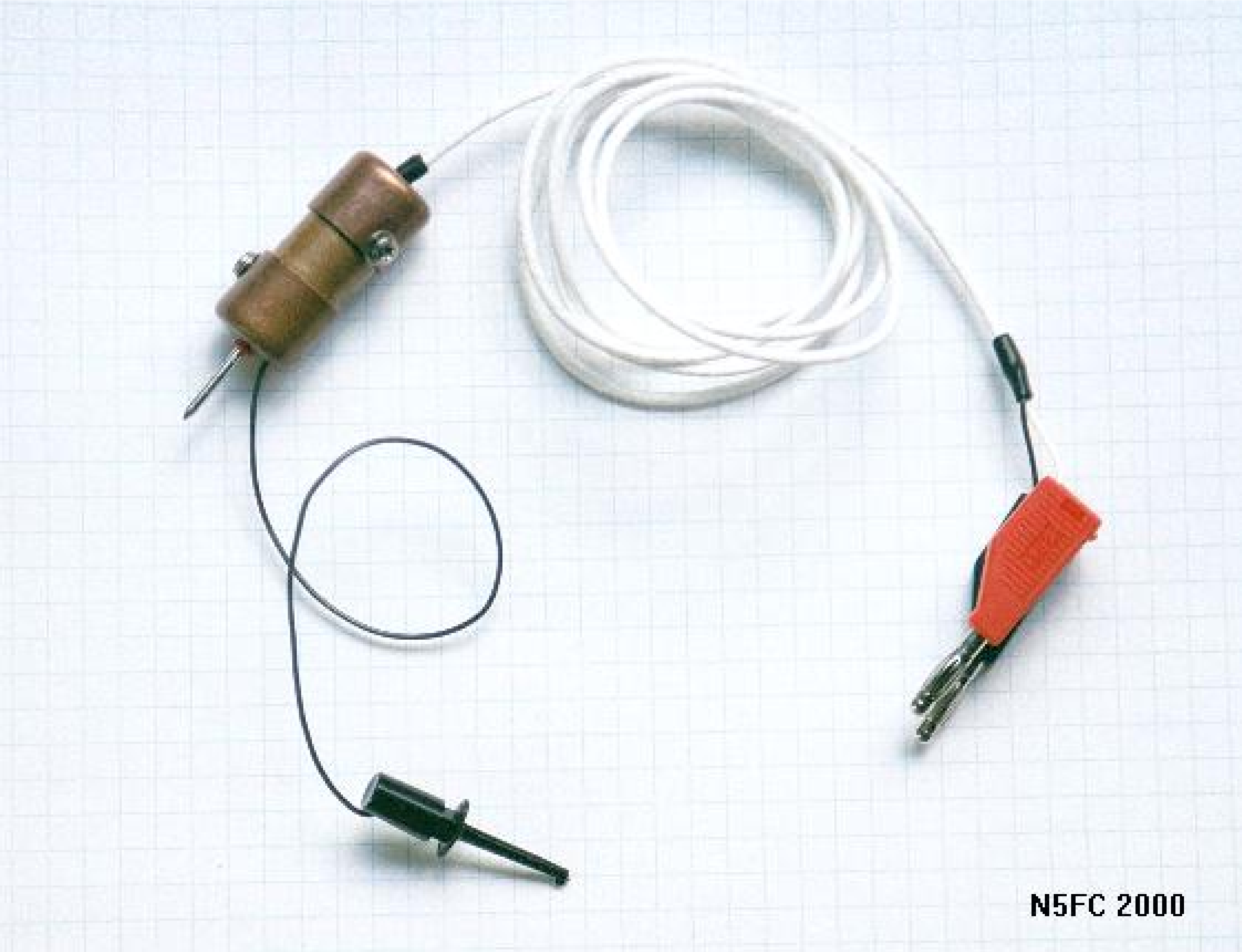

RF DETECTOR
COMPARTMENT
N5FC 4-2001



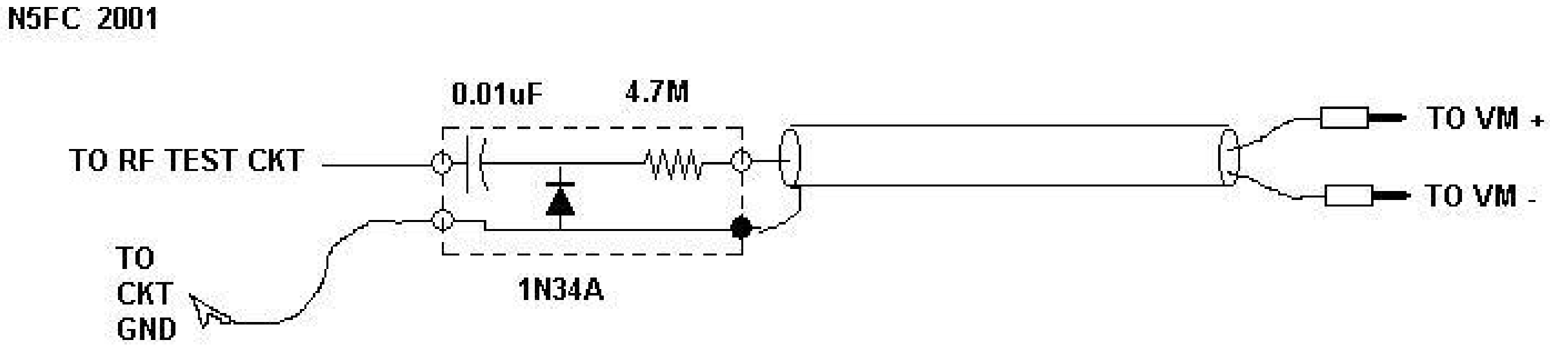
N5FC 4-2001


ATU
IN
5 DB
OUT
IN
10 DB
OUT
IN
20 DB
OUT
TX
N5FC 4-2001


N5FC 4-2001
N5FC
0-5-10-15-20-25-30-35 DB
5-Watt Attenuator


N5FC 2000

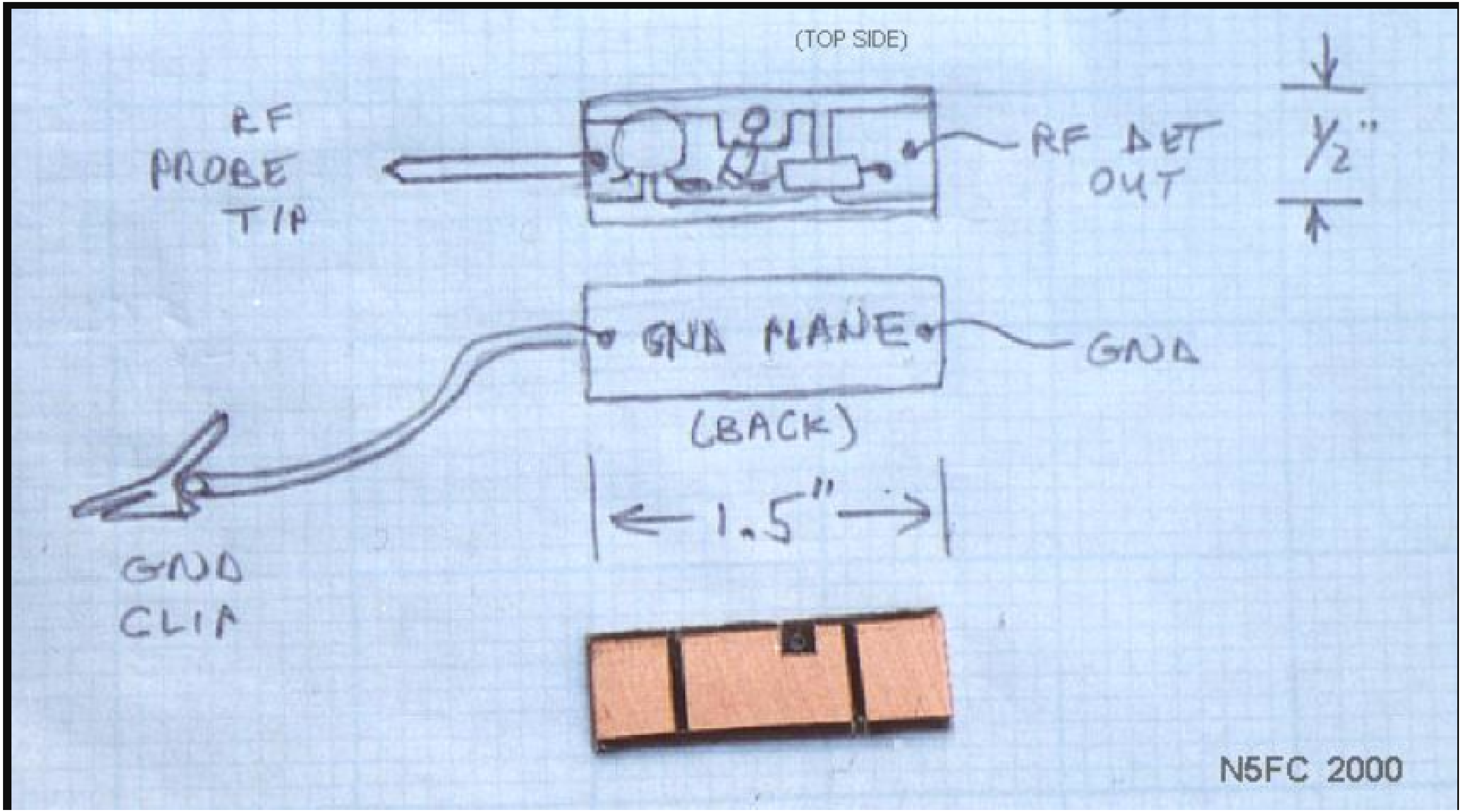
sic RF Probe. Simple, eh?

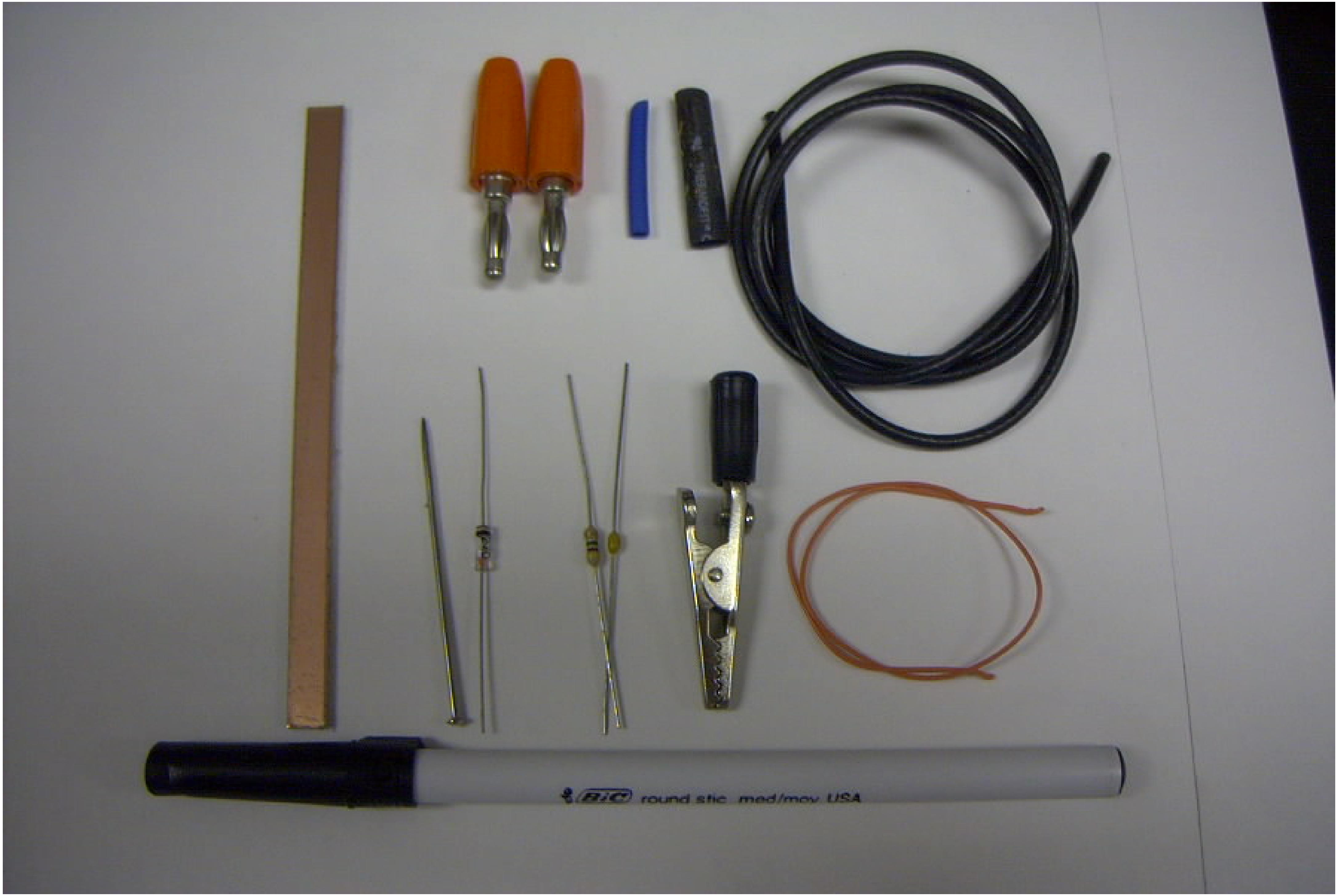


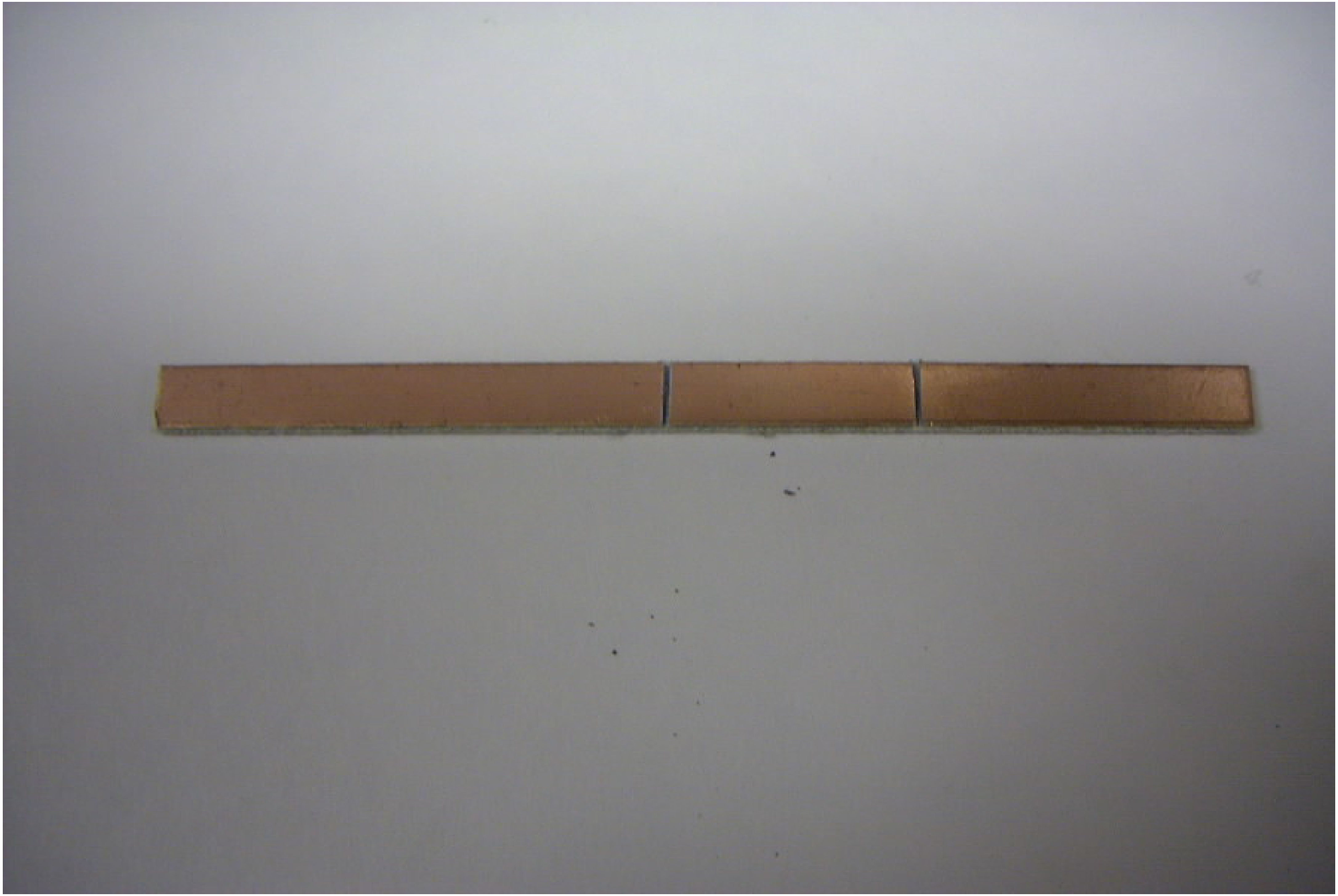
CLASSIC RF PROBE

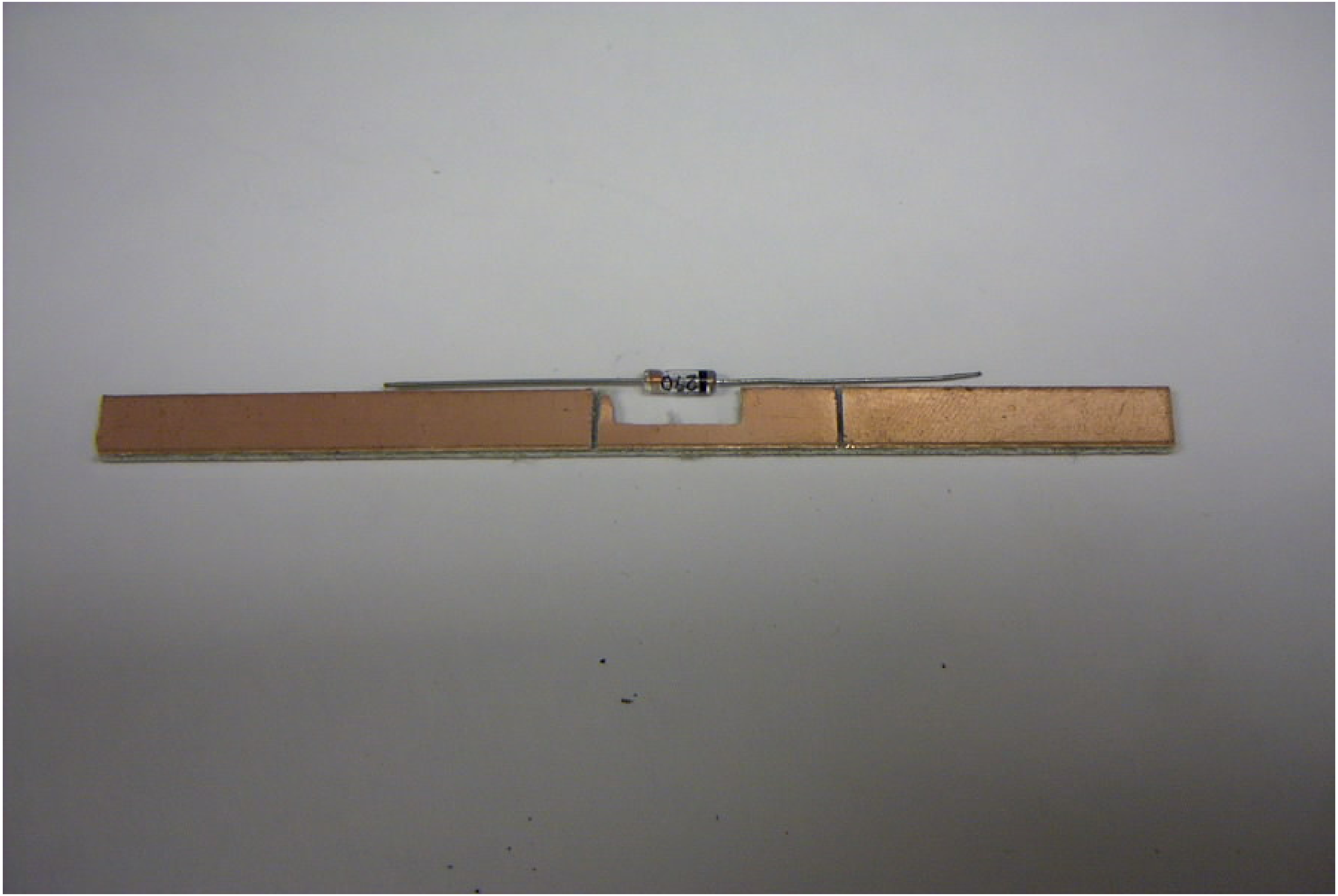
Reads RMS Equivalent Voltage in test circuit, if Voltmeter is 10-11 Meg Input Impedance;
Reads 4X RMS Equiv Voltage if VM is 1Meg Input Impedance (Set VM to measure DCV)

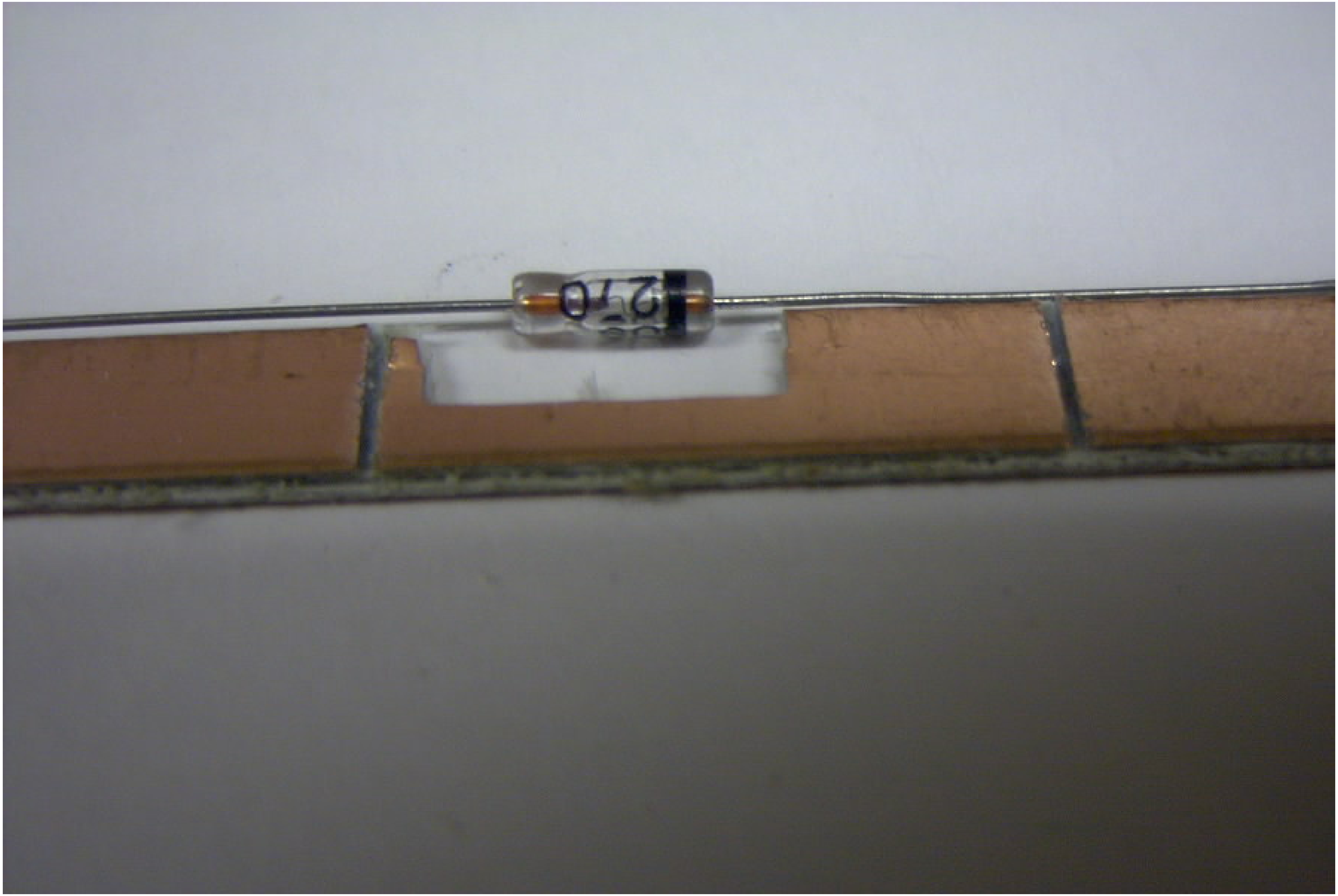
oretical discussion that we'll make short note of. Obviously, for "probing" we need a "probe". (Hey! No wonder I get paid the big bucks...). We add a SH
obe goes to our test circuit, where we're probing. Brilliant! We don't want either of these to be long leads, because we're talking RF here, and long leads =

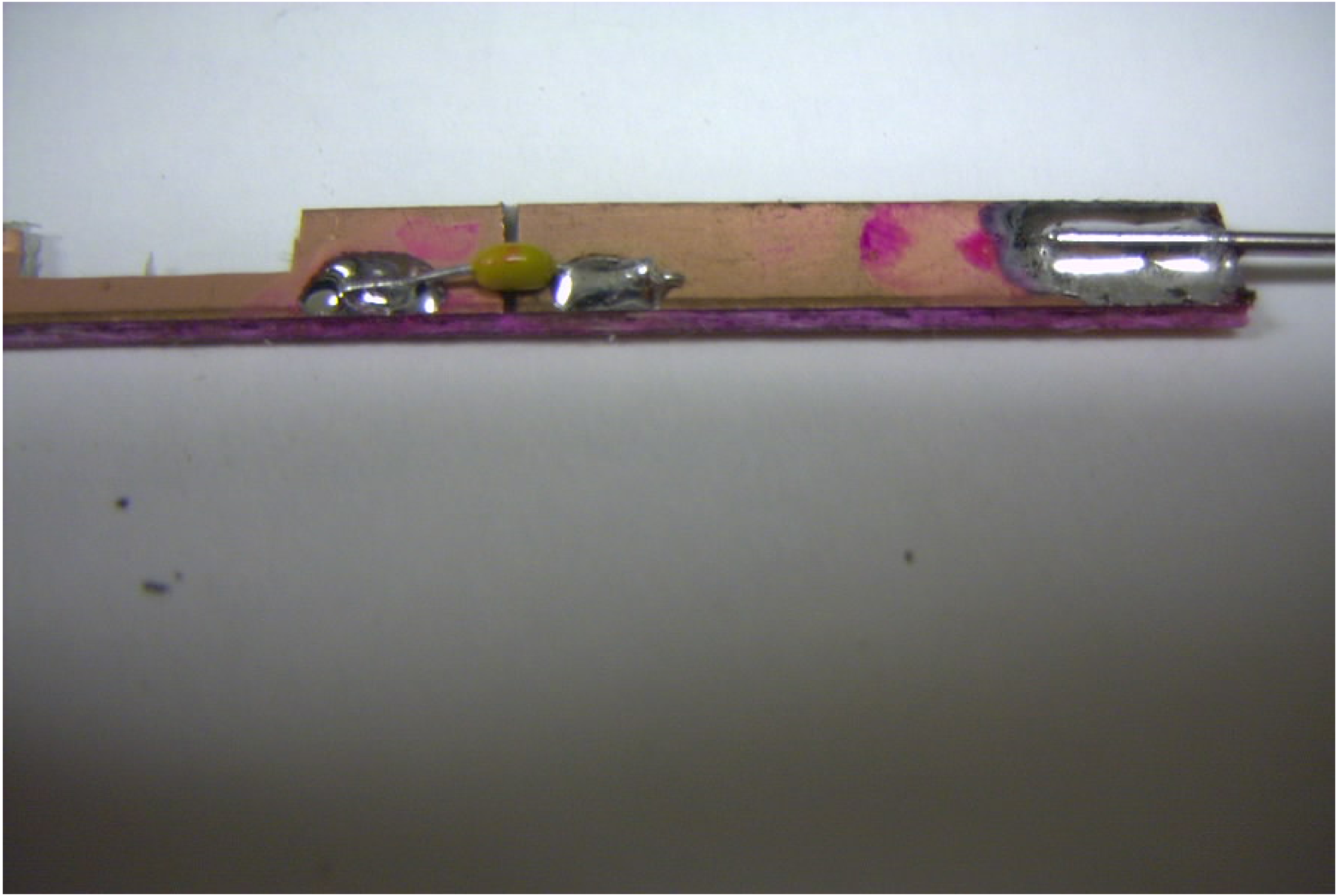

(TOP SIDE)
RF PROBE TIP
RF DET OUT
1/2"
GND PLANE
GND
(BACK)
1.5"
GND CLIP
N5FC 2000

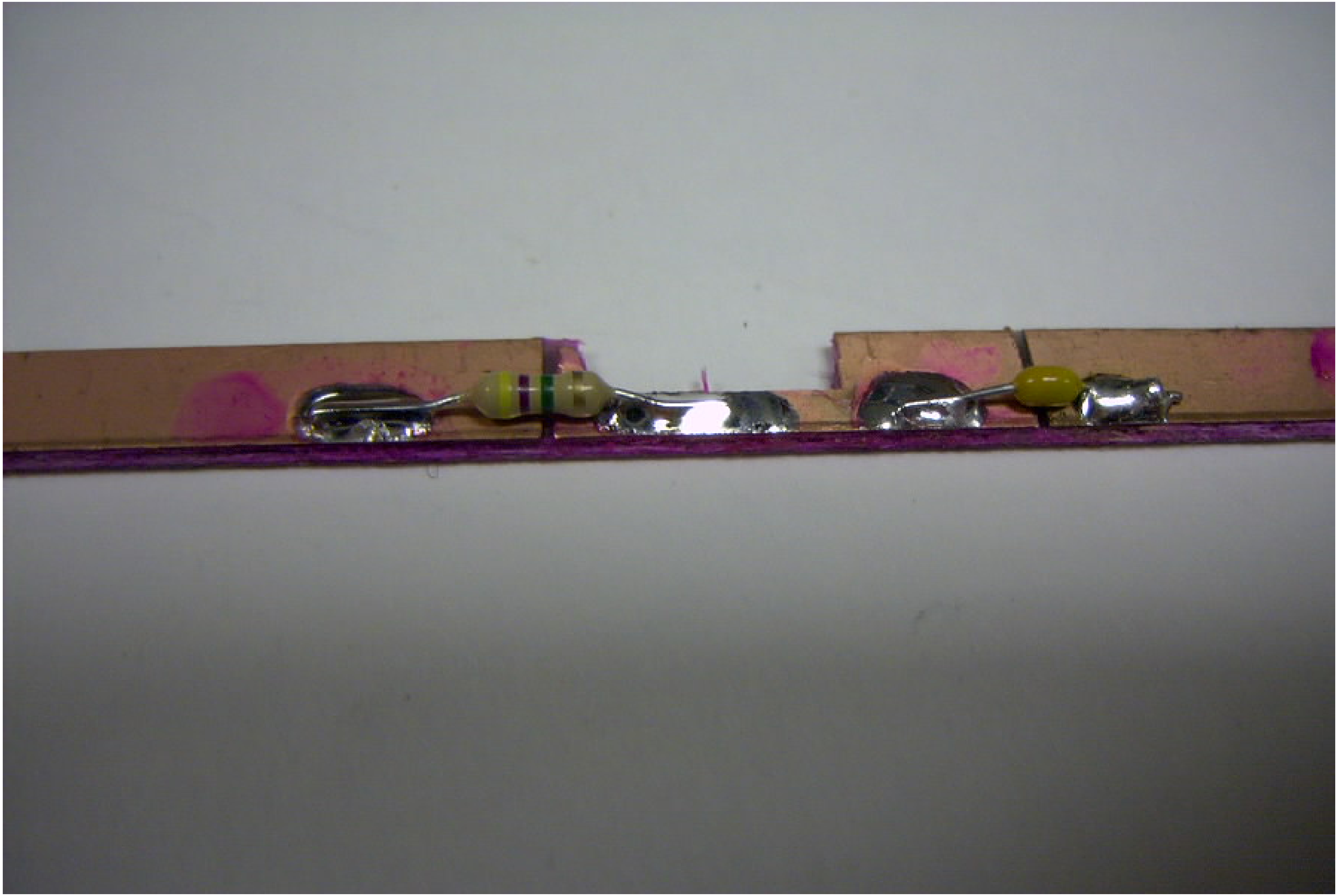

BIC round stic med/moy USA

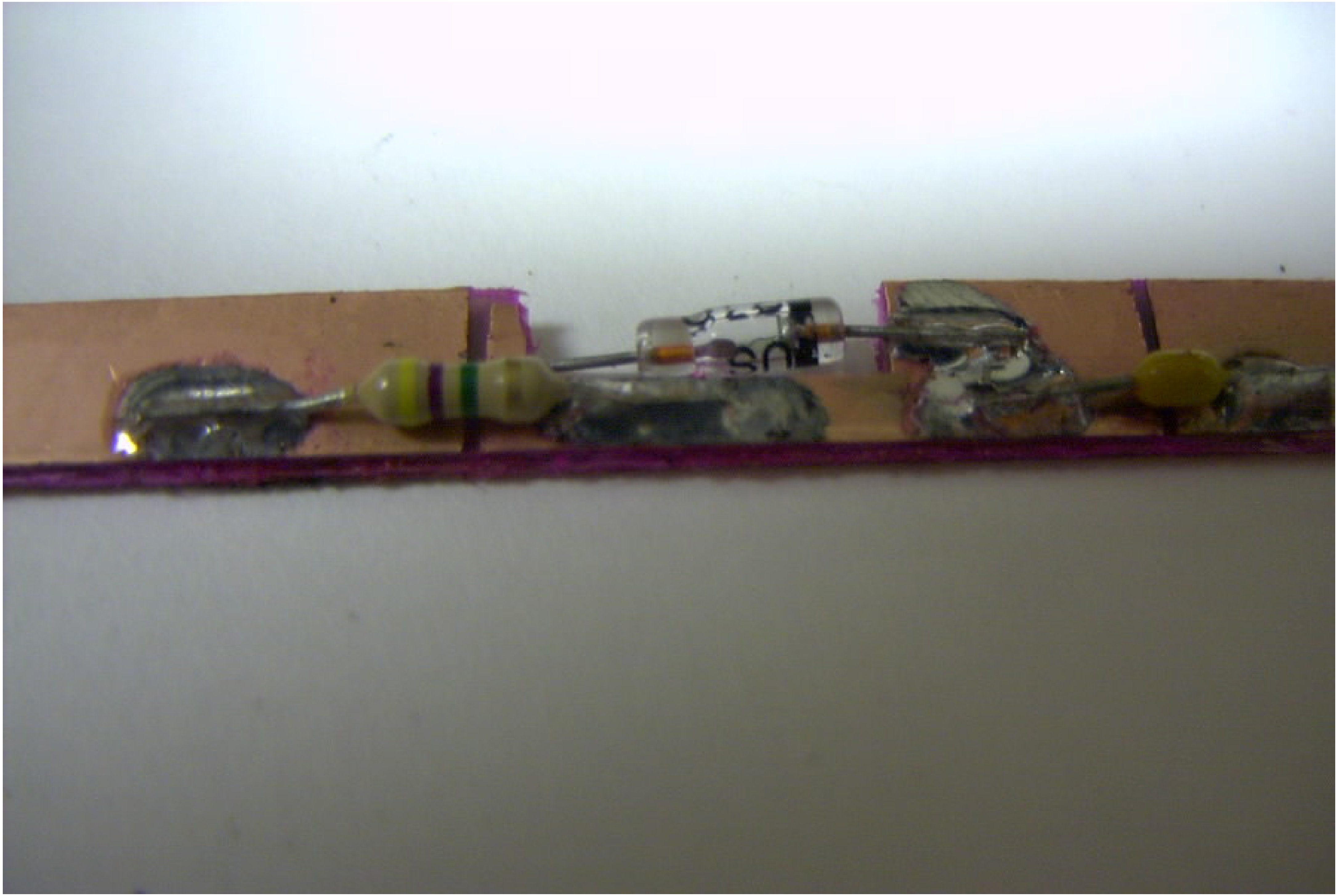


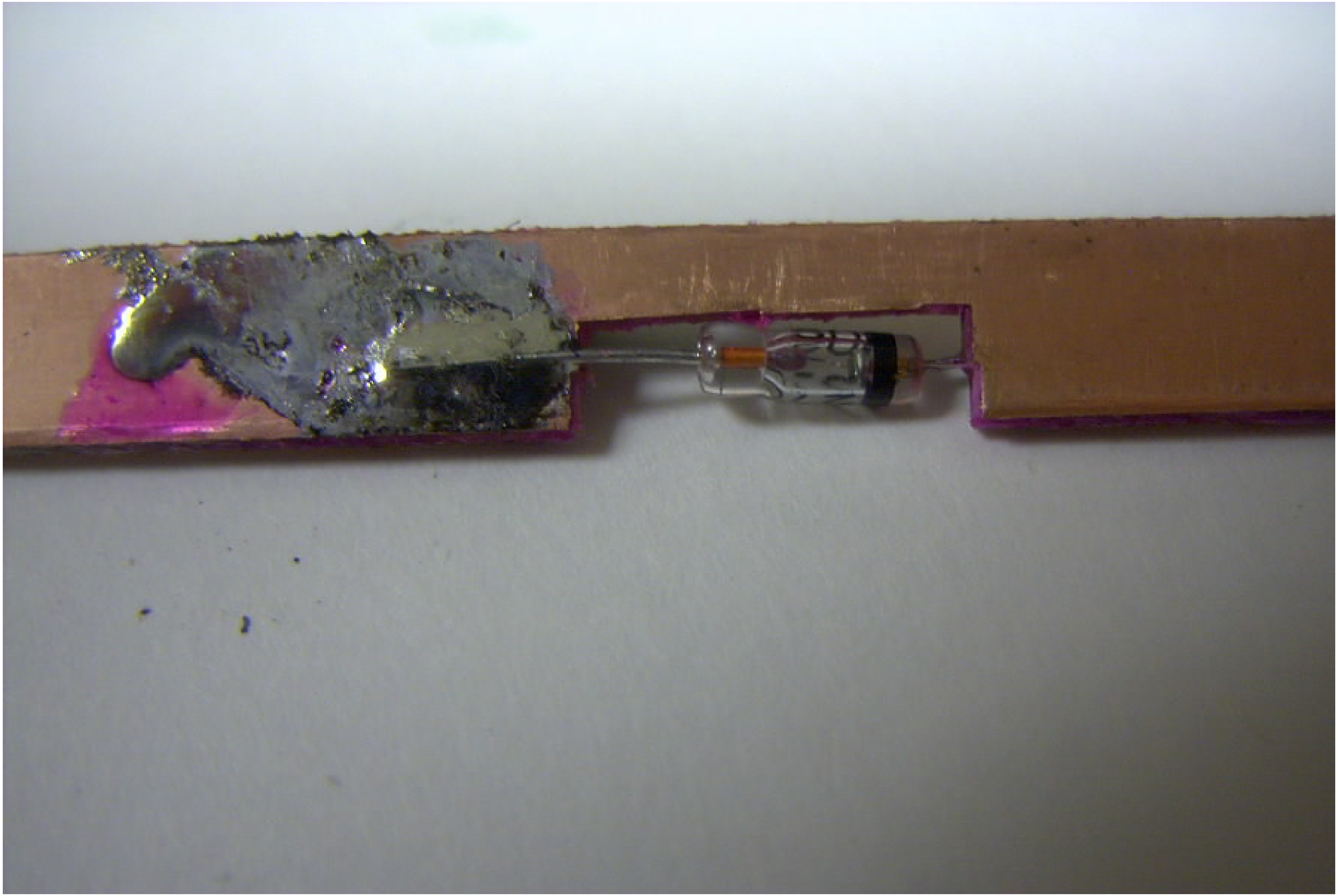


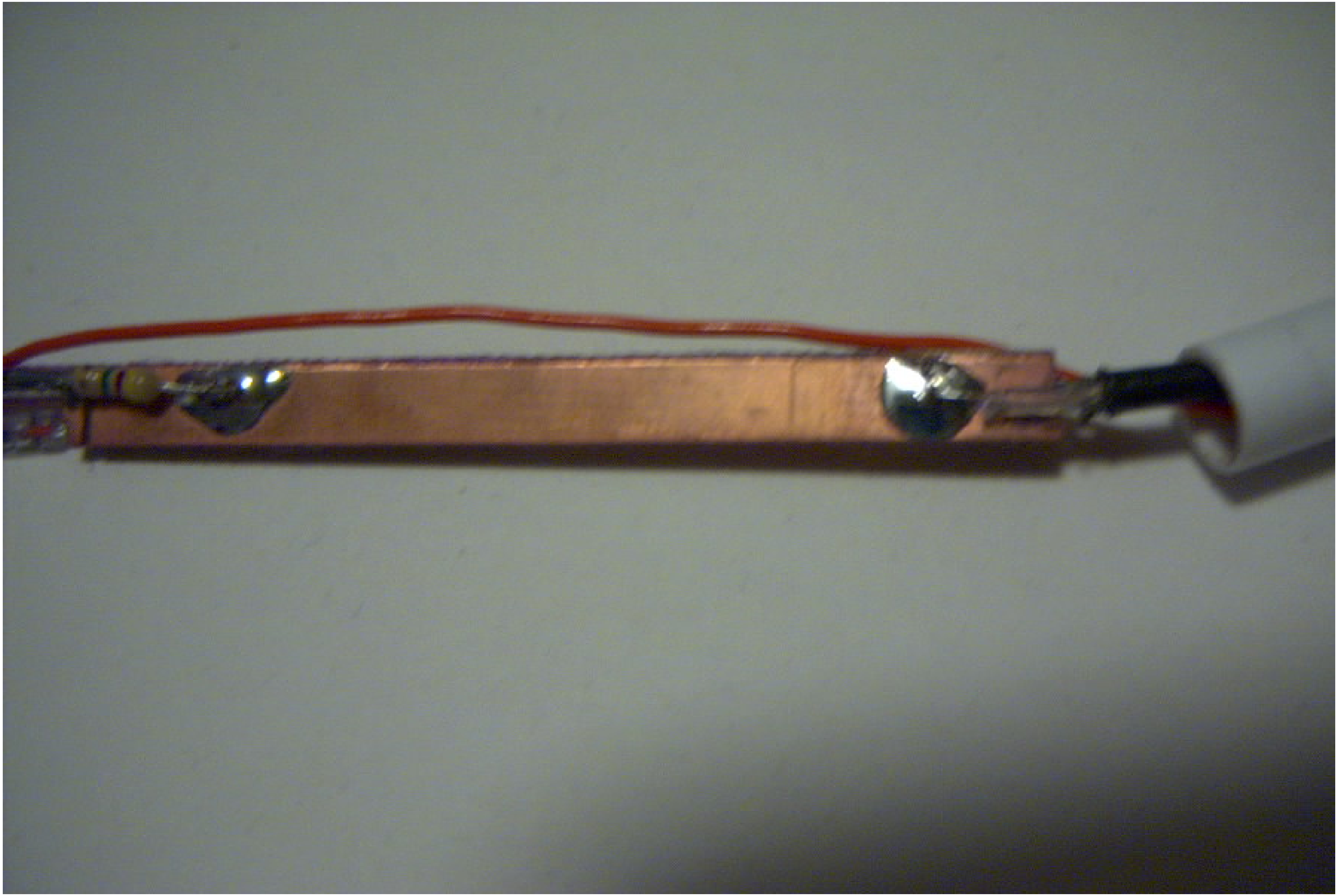










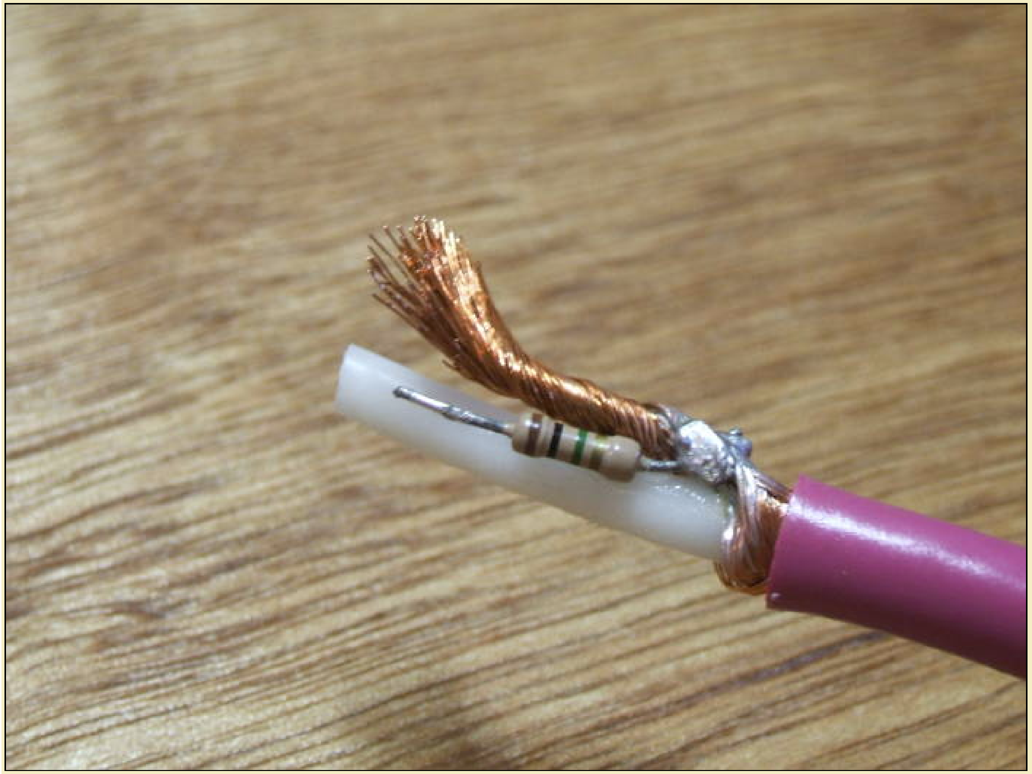


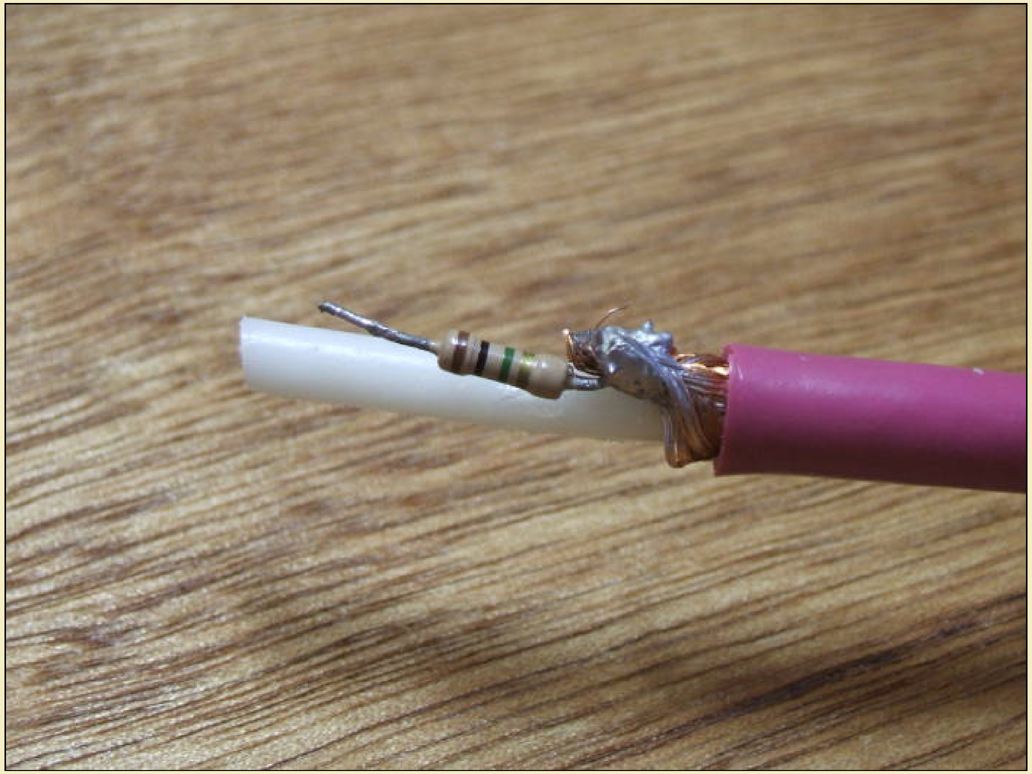
How to Build Your Own Oscilloscope Probes

Iere is the complete bill of materials:

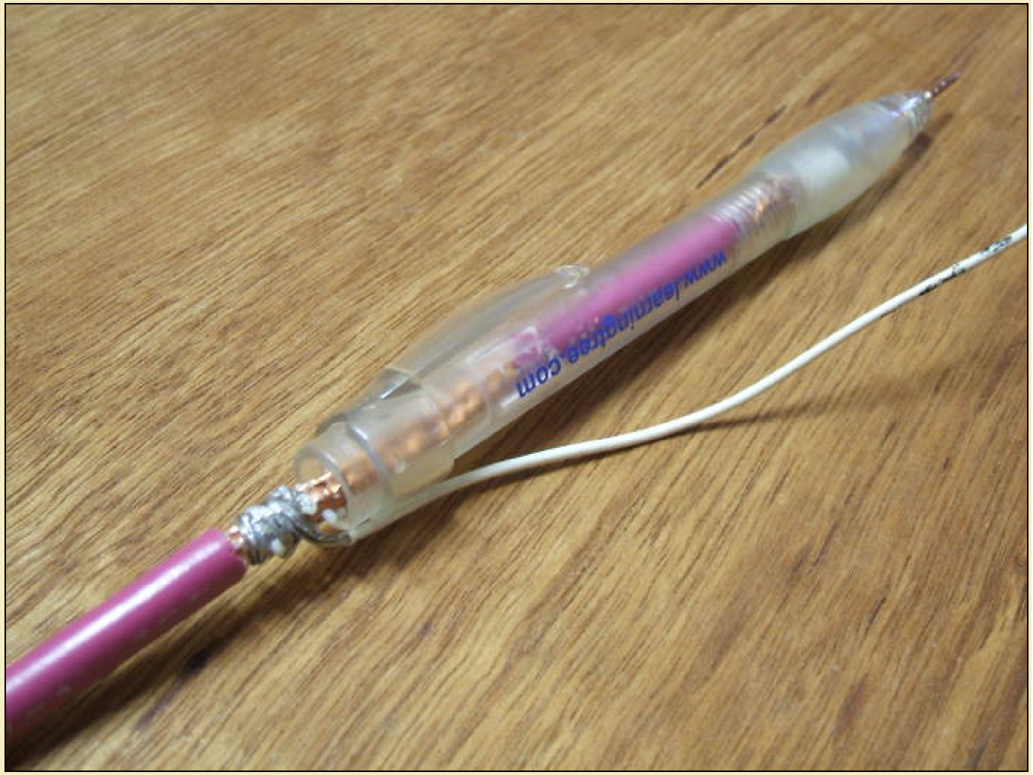
- The pen
- A 2-meter piece of coaxial test cable with a BNC connector on one end
- Epoxy adhesive
- One alligator clip
- Copper-plated nail — 0.75" (20mm) long, packed as "weather-stripping nail".
- 1 MΩ and 5 MΩ resistors

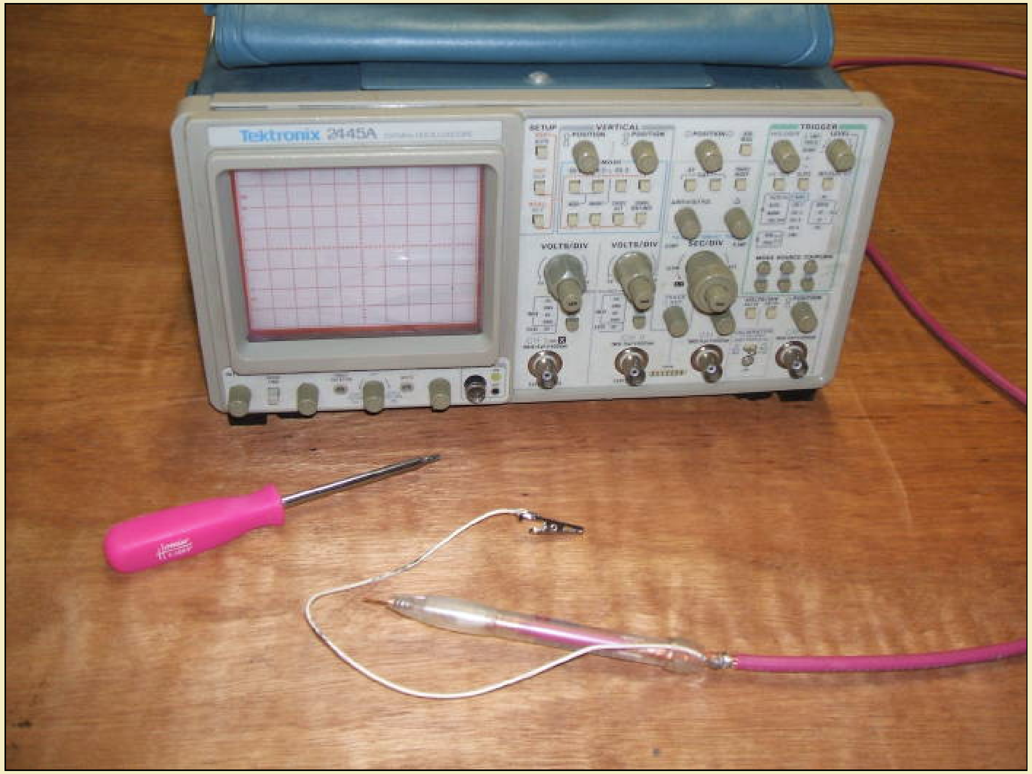

GB
Alligator Clips
Epoxy
Epoxy

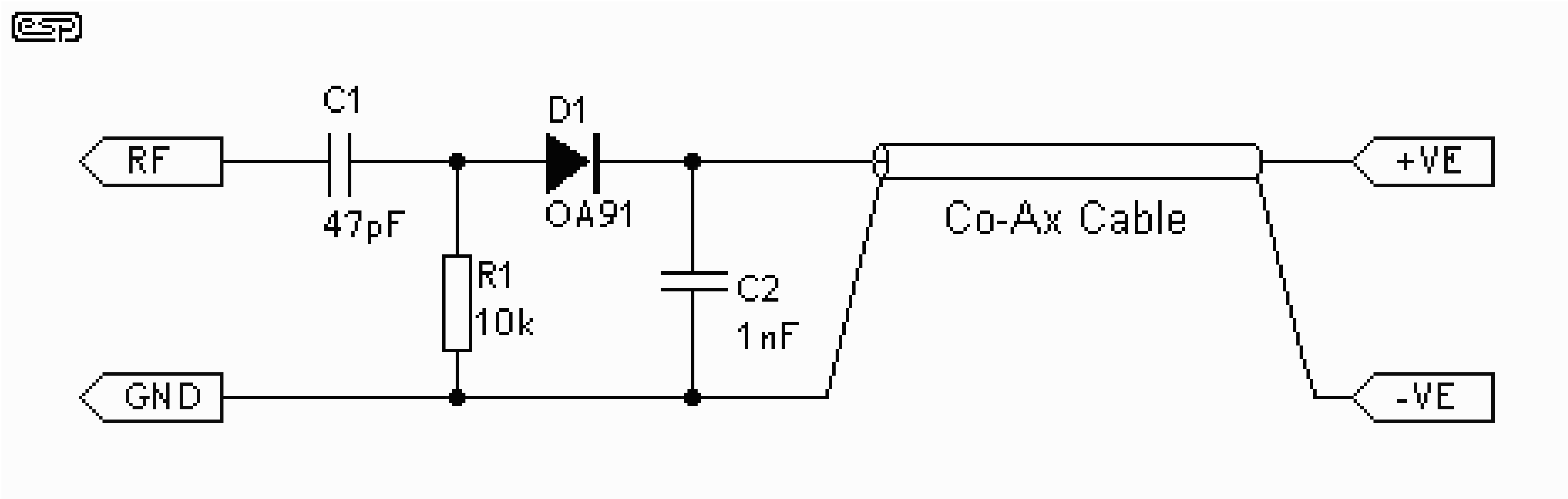




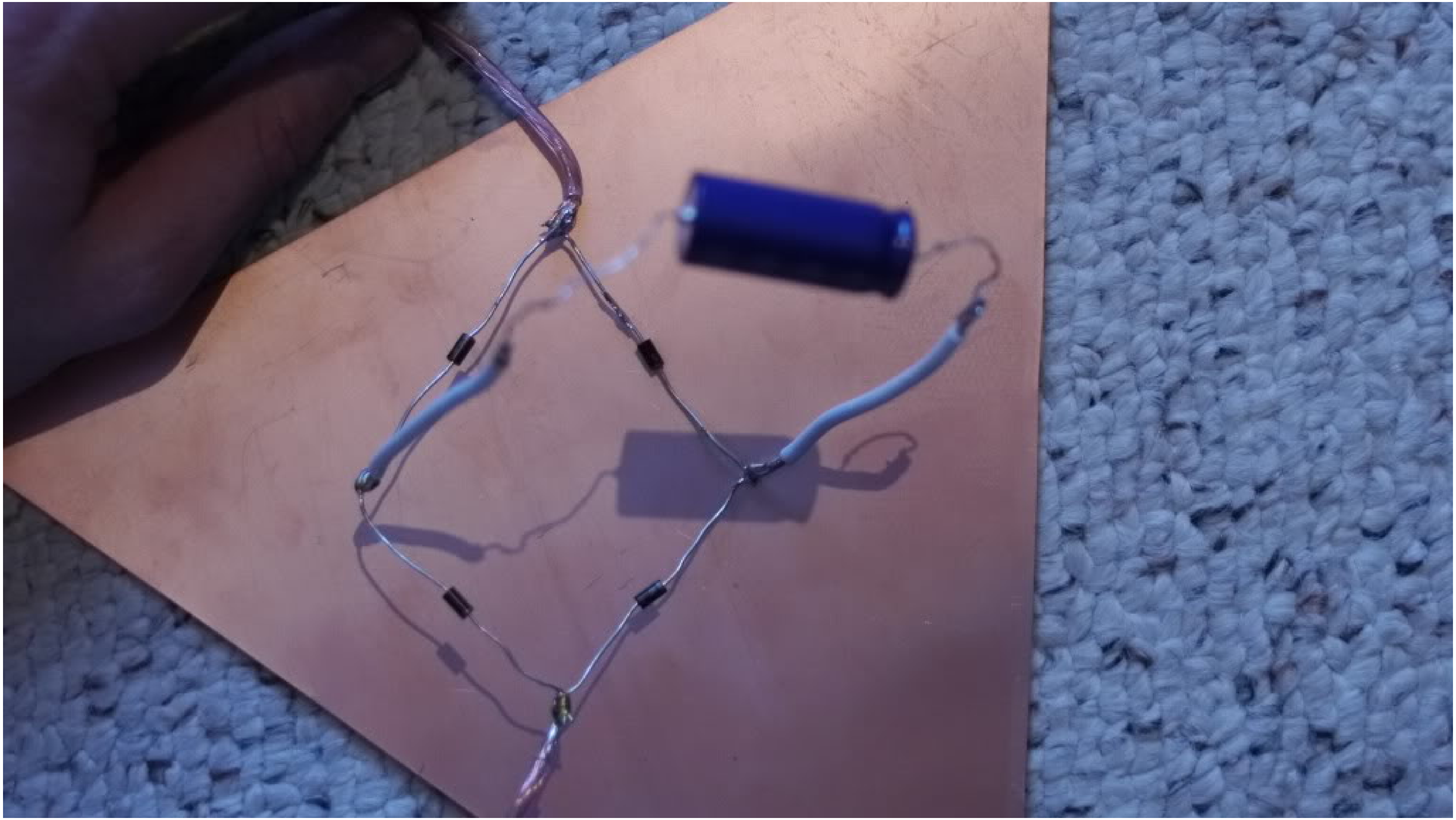



www.learningtree.com

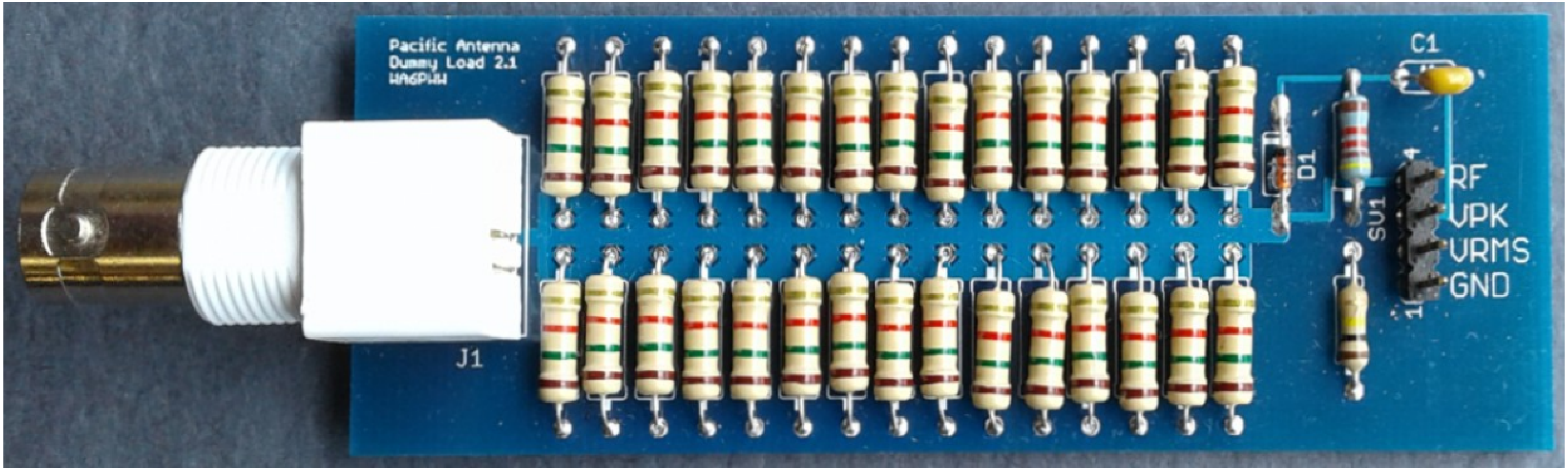

Tektronix 2445A
VERTICAL
TRIGGER
VOLTS/DIV
VOLTS/DIV
SEC/DIV



C1
47pF
D1
OA91
R1
10k
C2
1nF
RF
GND
Co-Ax Cable
+VE
-VE



Pacific Antenna 15 Watt Dummy Load Kit

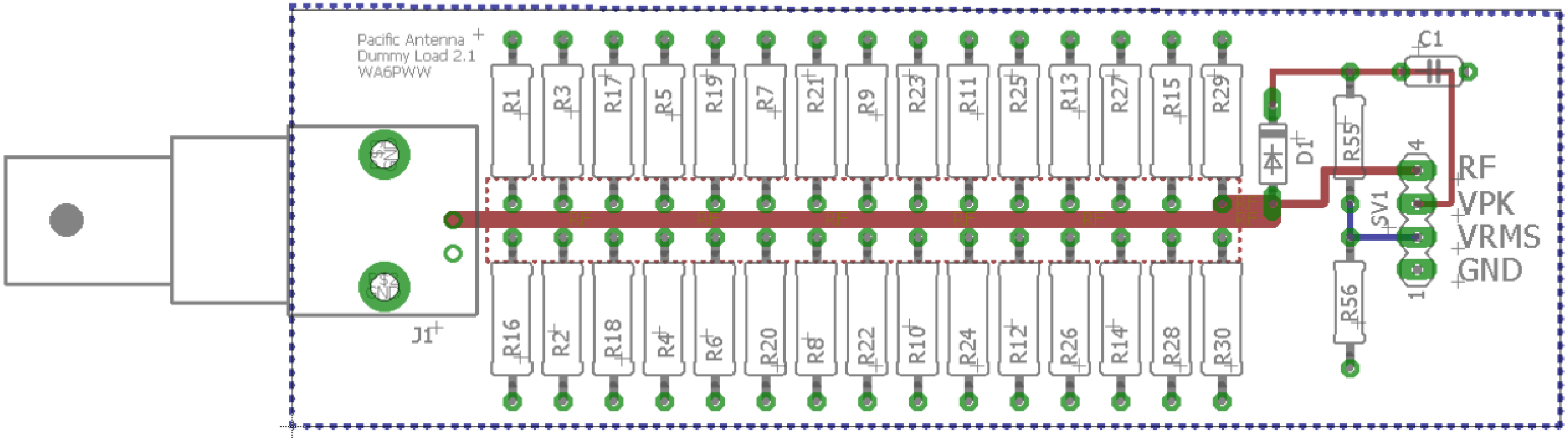


Inspection and Inventory

First, check the kit to be sure all parts are included. Should anything be missing, please contact us for a replacement.

30 – R1-R30, 1.5 K 1/2 watt resistors: Brown-Green-Red-Gold
1 – R55: 41.2K 1/4W, 1% resistor: Yellow-Brown-Red-Red--Brown
1 – R56: 100K 1/4W, 5% resistor: Brown-Black-Yellow-Gold
1 – D1: 1N4148 diode
1 – C1: 0.01uF monolythic capacitor, yellow, (marked 103)
1 – J1: BNC board mount connector
1 – SV1: 4 pin header
1 – Circuit board

Board Layout

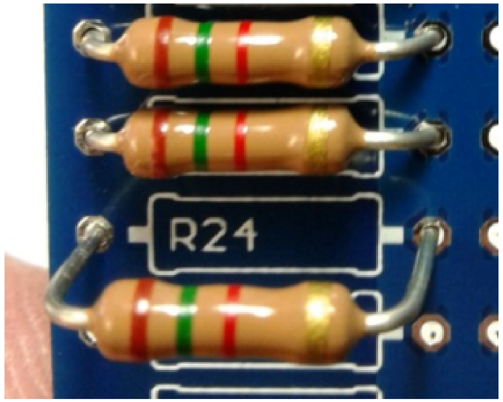


Assembly

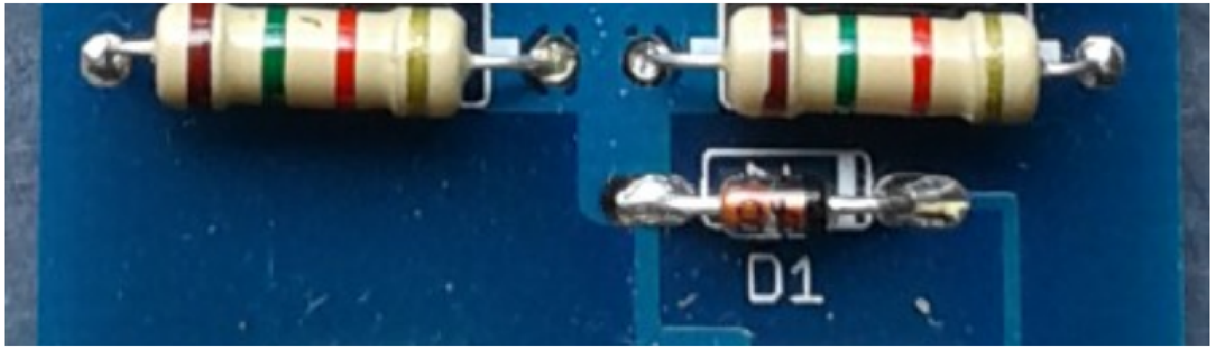
Install R1- R30
These are the 1/2W. 1.5K ohm resistors and they go in the marked locations shown on the circuit board.

You may find it helpful to do one row of the resistors at a time to make soldering the leads easier.

First, pre-bend the leads near the resistor bodies and then insert them into the board.



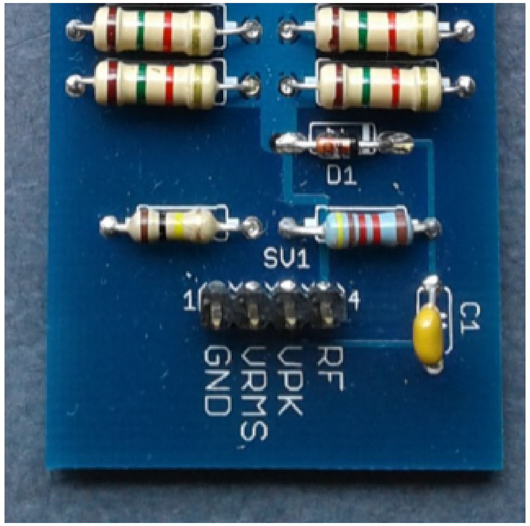
Install, solder and trim the leads of D1. Be sure to match the band end to the diagram above and the outline on the circuit board.



Install R55 the 41.2K ohm (Yellow-Brown-Red-Red—Brown) resistor in the marked location on the board

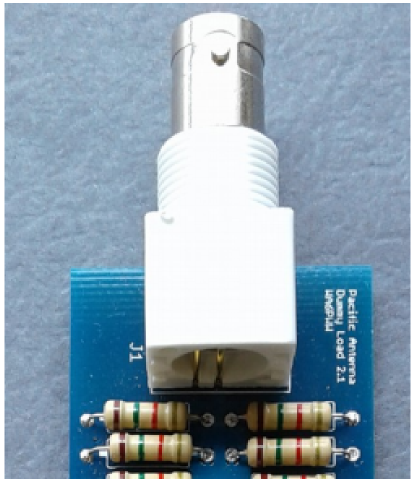
Install R56, the 100K resistor (Brown-Black-Yellow-Gold) in the marked location on the board.

Install C1 the 0.01uF capacitor in the location marked on the board.

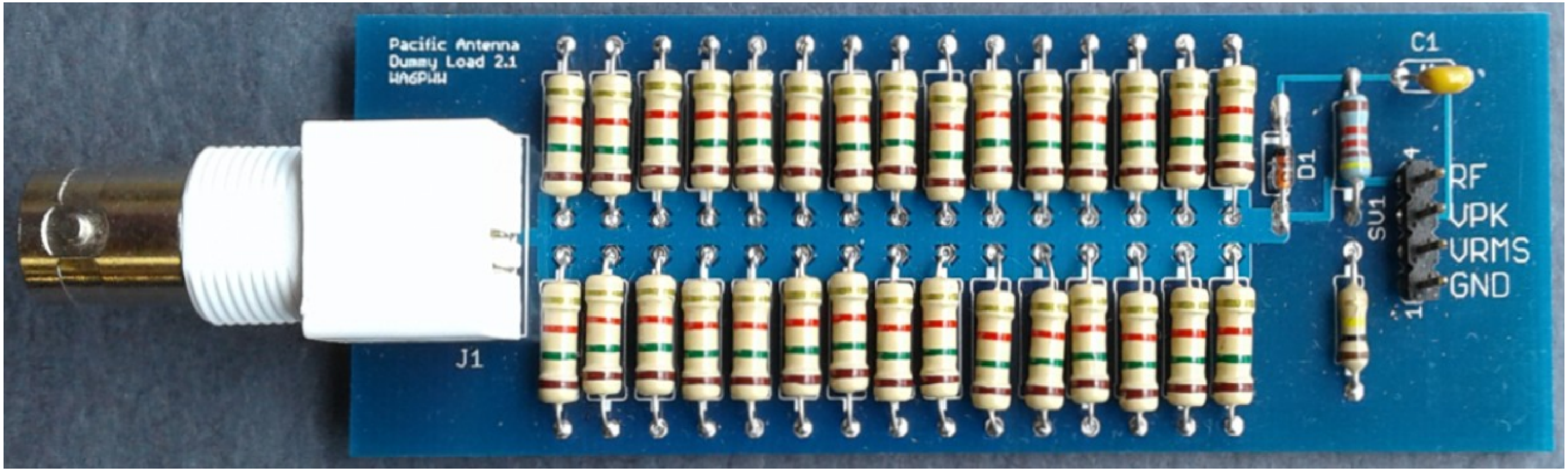


Now, solder the BNC connector, making sure to seat it fully into the board. Solder the two small wires and the two support pins.

The support pins may require longer time, increased temperature or a larger soldering iron to properly solder.



Congratulations, your dummy load kit is now complete!



Operation

The dummy load is easy to use. Simply connect your transmitter input to the BNC

To measure RF Power, connect your multimeter to pin 1 and Pin 2 or 3.

Pin 1 is ground and the DC output voltages appear on pins 2 and 3 of SV1.

Pin 2 provides the RMS value of the RF voltage.

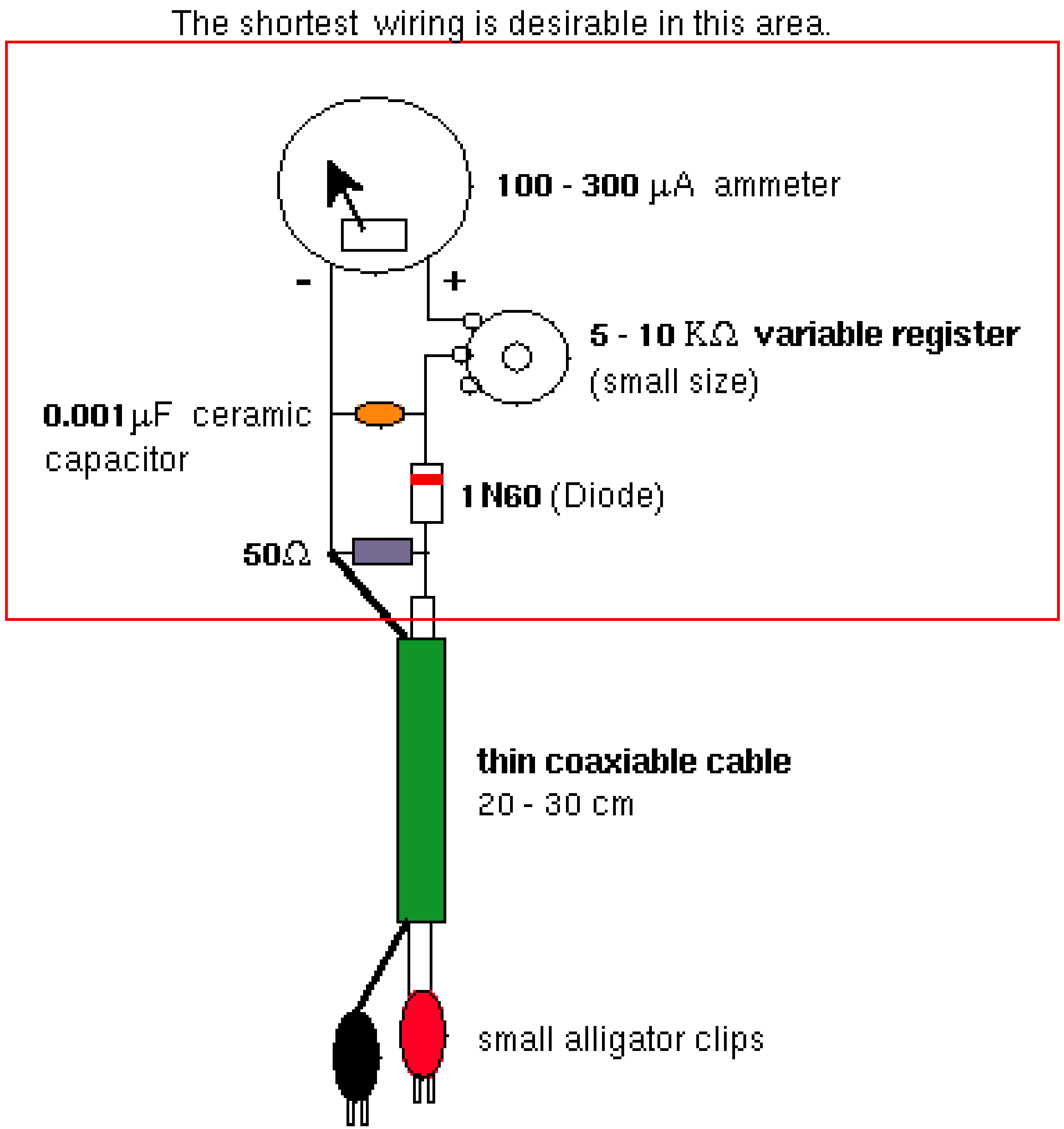
Pin 3 gives the Peak value of the RF voltage.

Pin 4 is direct RF voltage across the resistors.

RF power is calculated from this relationship: Power = (Vrms^2)/50

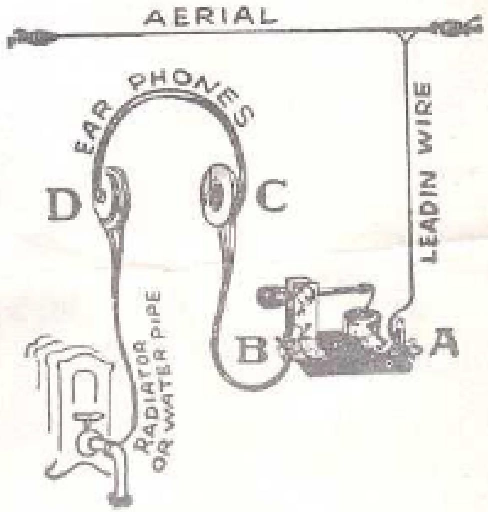
Note: The power input should be limited to 15W to avoid damaging the resistors and sense circuit components.

The simplest power meter



As for the ammeter, you can use an used one taking from junked audio amplifier, tape-recorder, radio-cassette, and so on.

Instructions for using
Philmore Crystal Radio Detector



This Detector is a radio in itself, as it is possible to get reception with it alone, provided you are within 25 miles of a broadcasting station. Under very favorable conditions reception is sometimes possible at much greater distances.

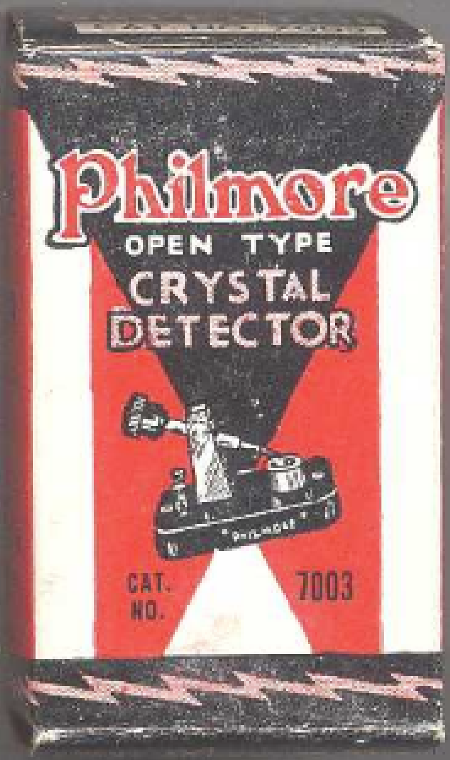
In order to get reception, you need an aerial kit and headphones. The AERIAL may consist of 100 to 125 feet of copper wire and two insulators. Attach insulators to each end of the wire. Stretch the wire allowing as little sag as possible. No part of this wire should touch any portion of the building or any other obstruction.

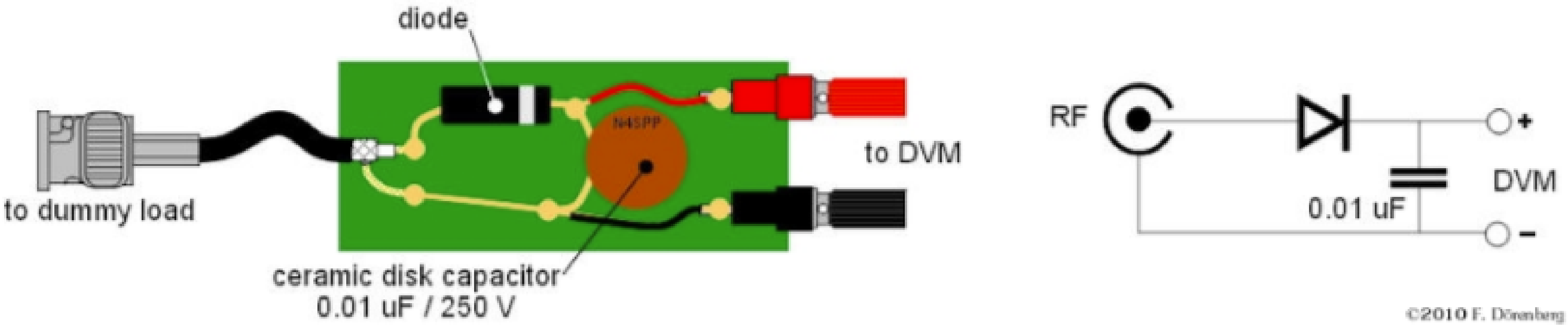
The LEAD-IN may consist of any desired length of covered wire which will reach from the aerial to the set. Scrape each end of the lead-in so that the wire is absolutely clean. Wind one end securely around the aerial wire. Place the other end in the clip marked "A".

There are two cords leading from the headphones. Connect the cord "C" as illustrated, from the earphone to clip "B" or the clip under the detector arm. The other wire from the earphone marked "D" is to be connected to water pipe, radiator or any other suitable connection to be used for the ground.

You are now ready to receive broadcast. Find a sensitive spot on the crystal by means of the cats-whisker. You may find it necessary to "hunt" for live spots on the crystal as only some parts of a crystal are sensitive, and unless you find these sensitive spots you will not hear anything.

If you do not at first get results, do not blame the detector, as every set is tested before being shipped and will positively get results under the proper conditions. Do not write in and ask what the trouble is for a personal examination of your entire hook-up will be necessary. Go over your aerial, ground, various connections, etc., and if necessary get someone who thoroughly understands radios to help you.

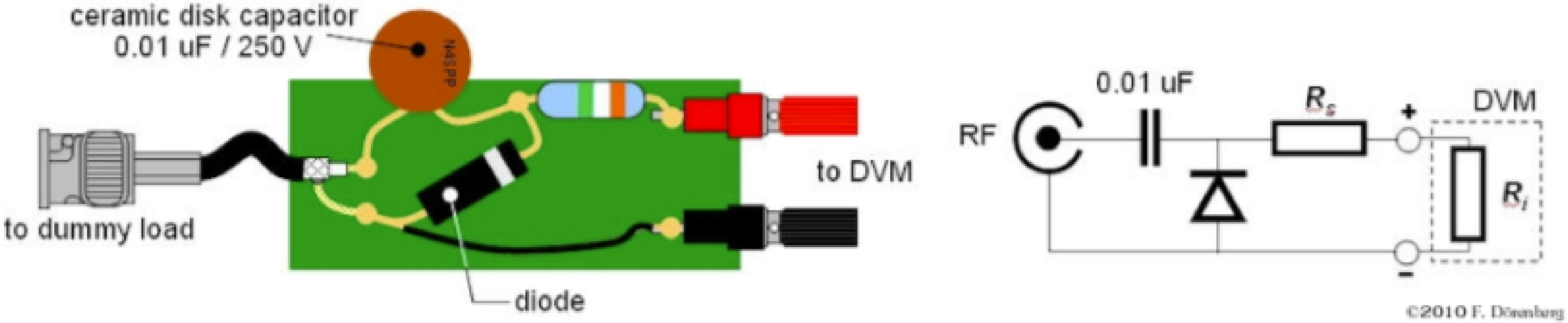




A simple RF-probe

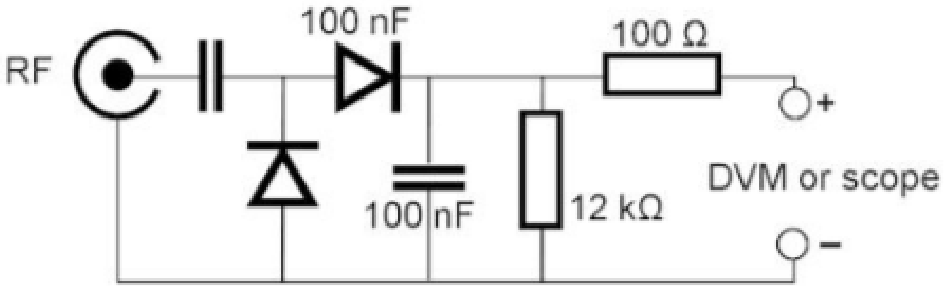
Obviously, this circuit will be fooled by a DC-offset on the RF signal. We can fix this by swapping the diode and the capacitor. Note that this is not necessary if you measure an RF voltage via a transformer, such as a directional coupler.

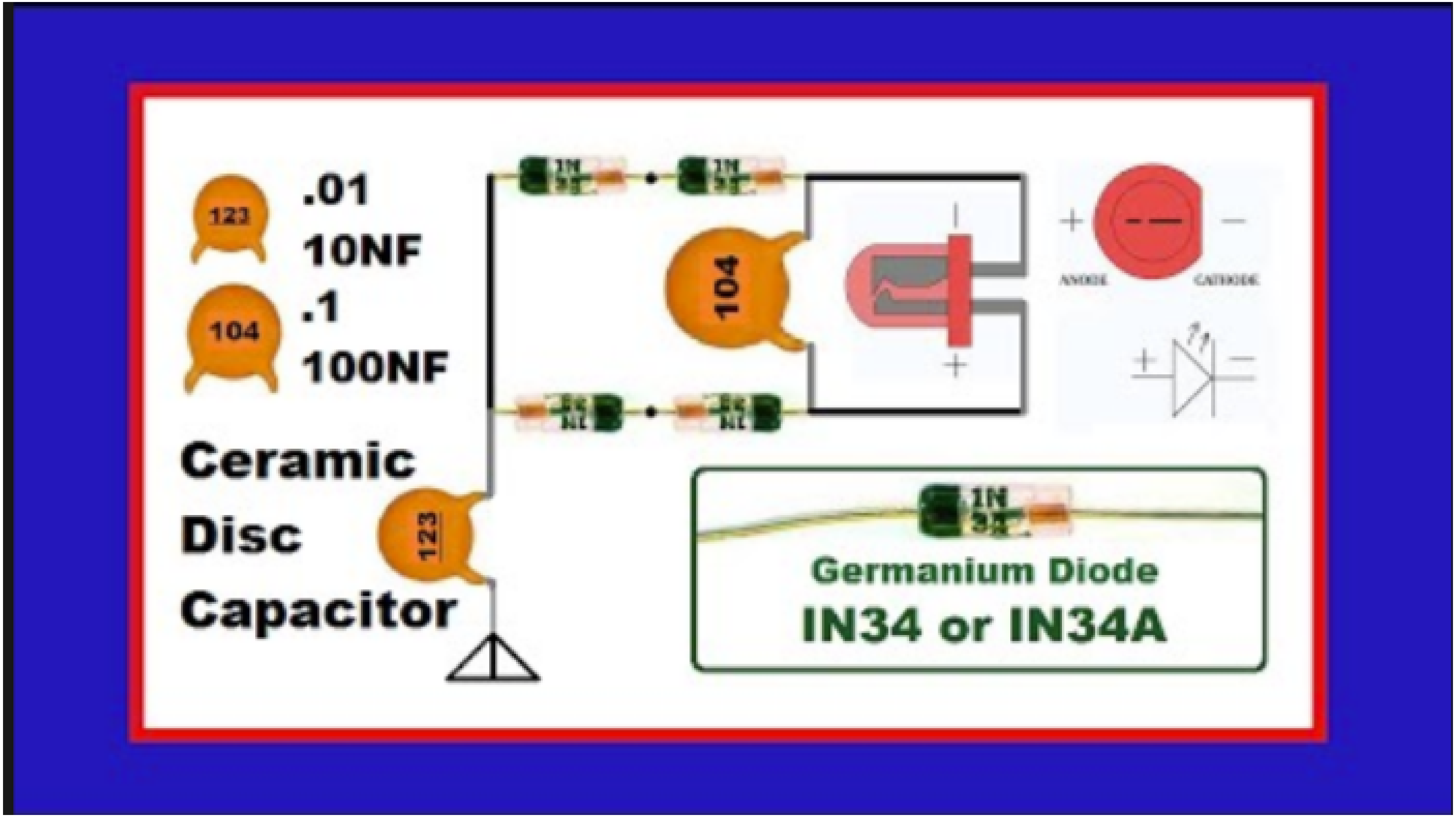
We can also make life a little easier by including a voltage divider with a scaling factor that is equal to the reciprocal of √2. Then the output voltage will be the RMS value that we are interested in. We can make a voltage divider where one resistor is the input impedance of the DVM. My DVM has a published input resistance of 10 MΩ. The second resistor should be 4M14 Ω,since 10 / (10+4.14) = 1 / √2). So 3M9 + 220k = 4M12 would be a good choice. This approach is shown below. Note that the resistor should be non-inductive (e.g., bulk-metal-foil or carbon).



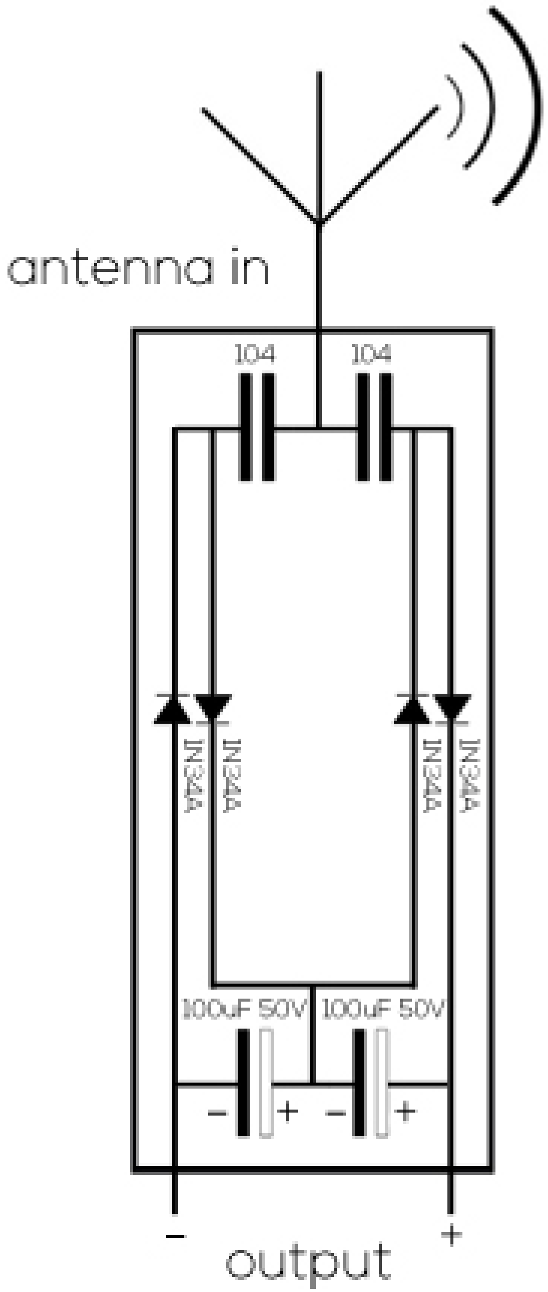
RF-probe with DC-block and peak-to-RMS scaling

A variation on this, with a full-wave rectifier, is shown below:





123
.01
10NF
104
.1
100NF
Ceramic
Disc
Capacitor
123
104
ANODE
CATHODE
Germanium Diode
IN34 or IN34A



RF to DC

Circuit Diagam (simplified)

Component list:
(2) Ceramic Capacitors (104)
(4) Germanium Diodes (1N34A)
(2) Electrolytic Capacitors (100uF 50V)

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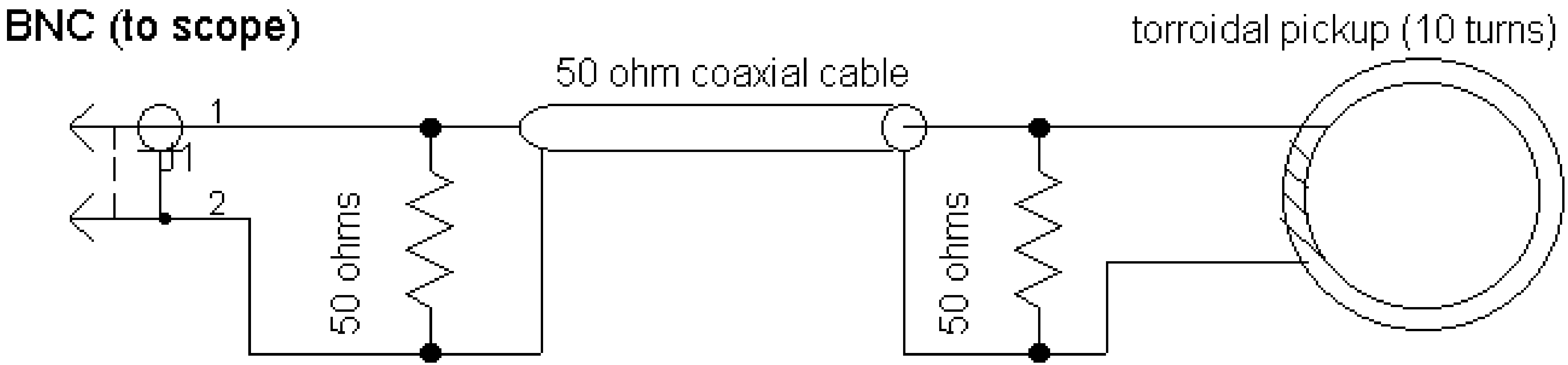
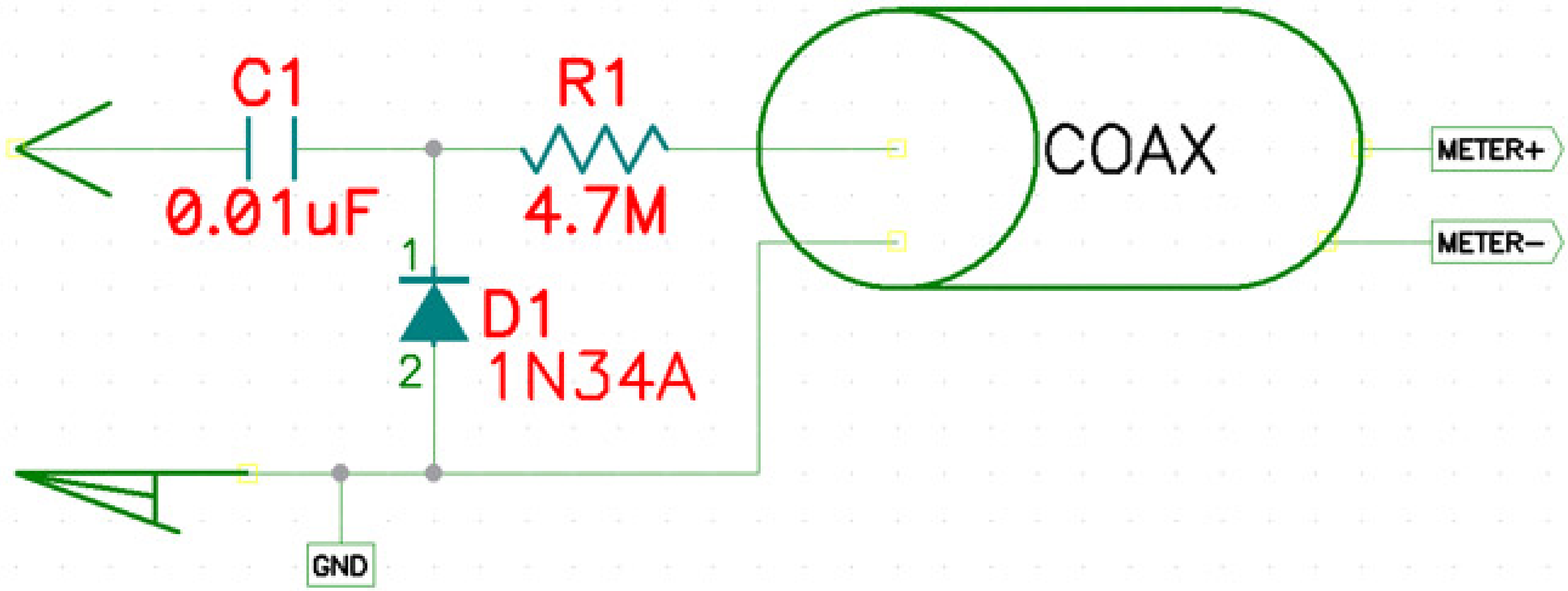
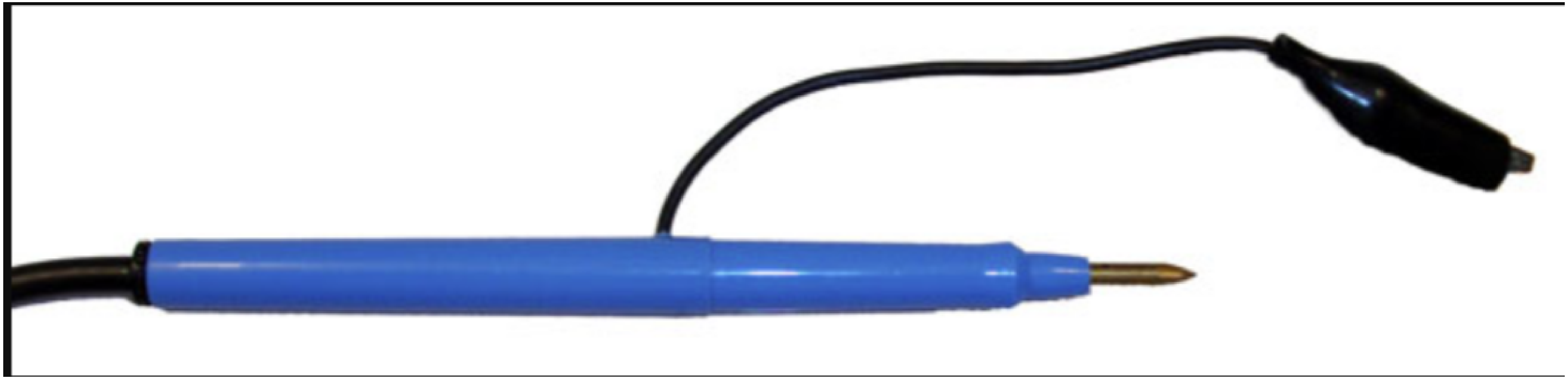
RF Current Probe

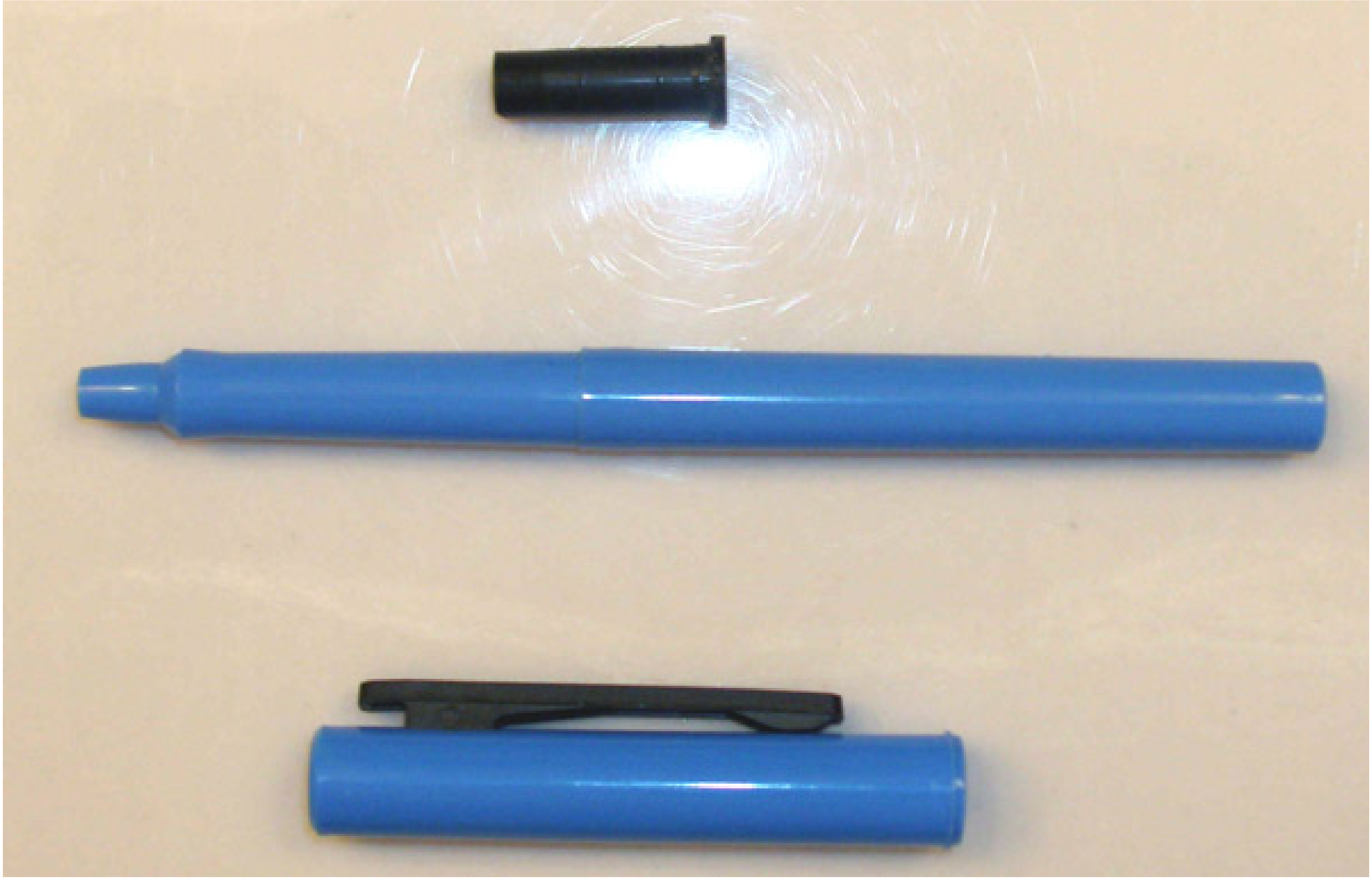


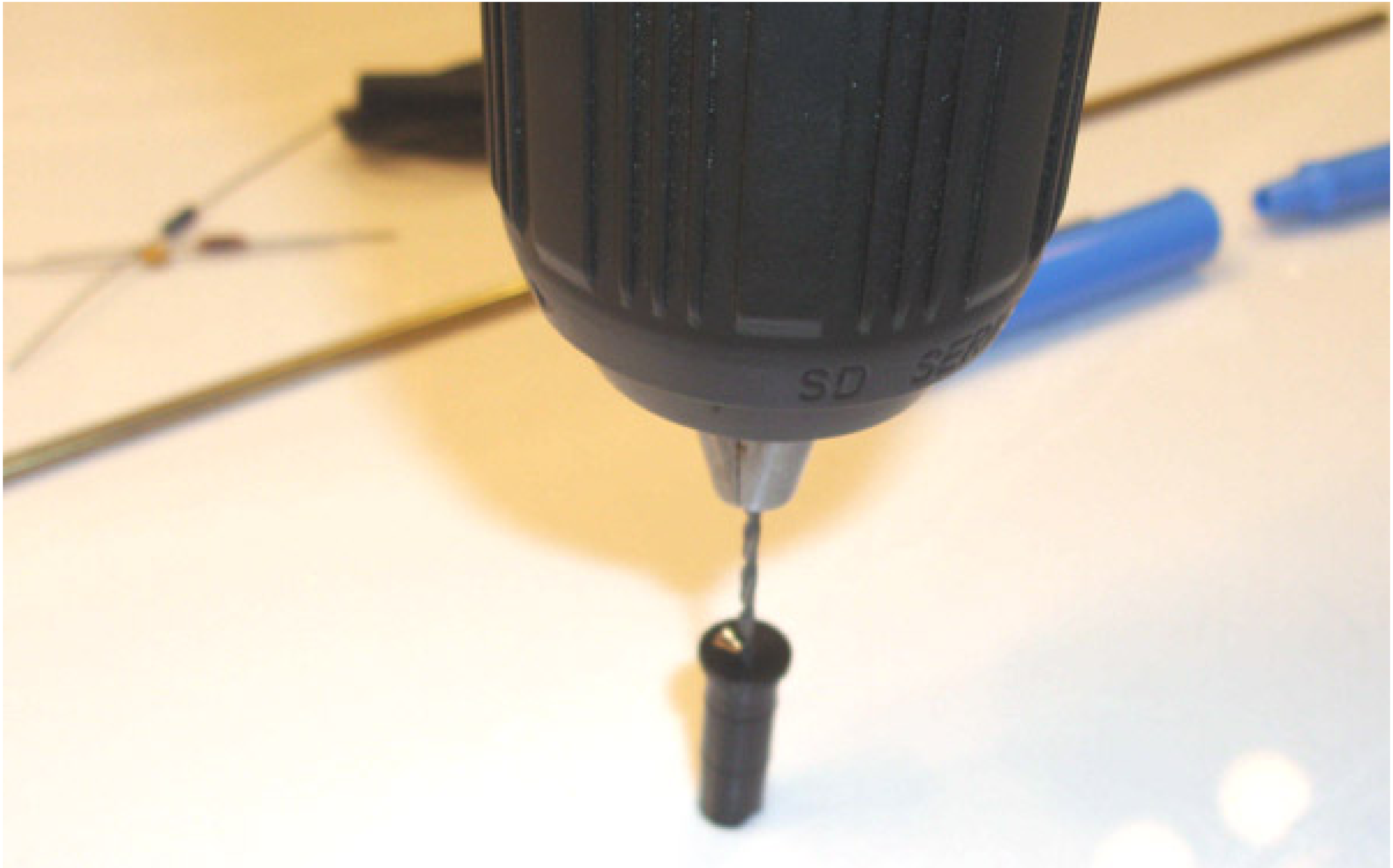


Simple RF Probe

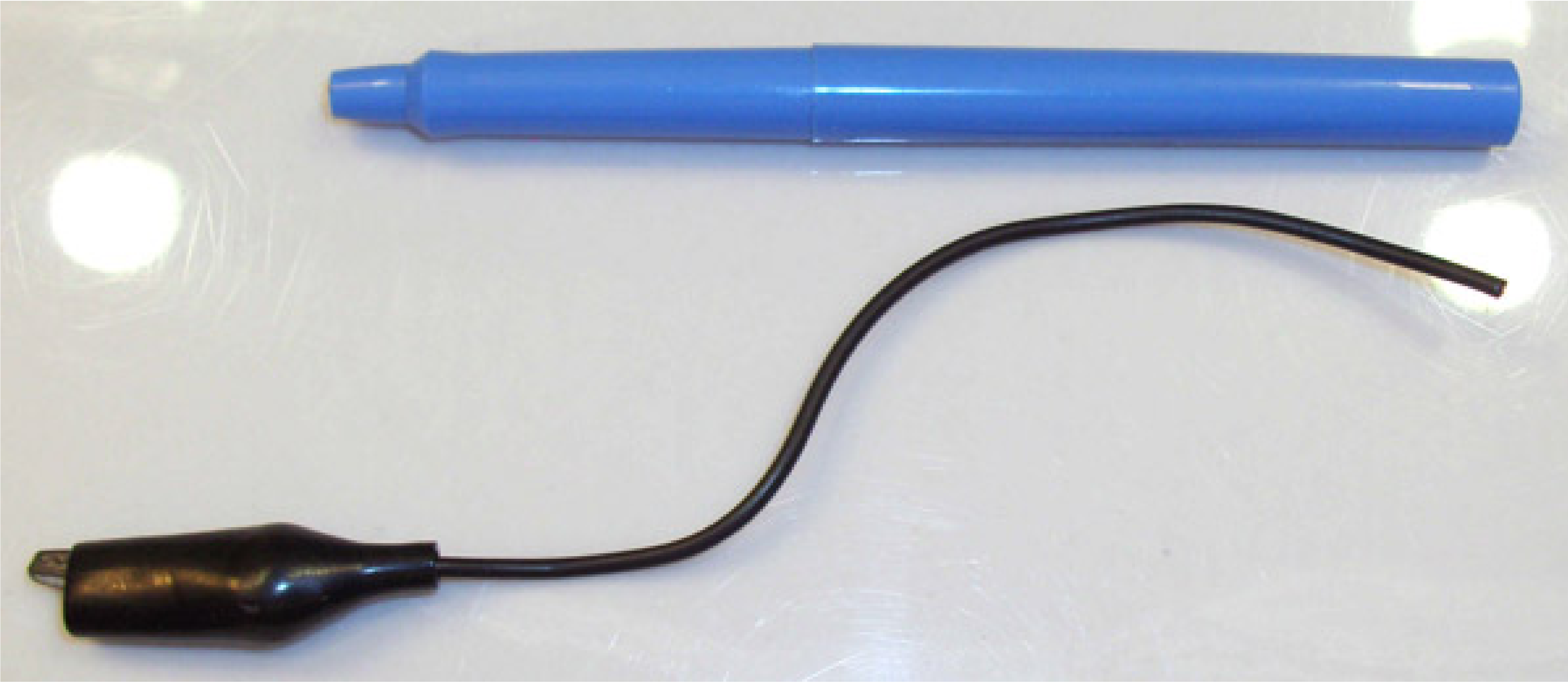


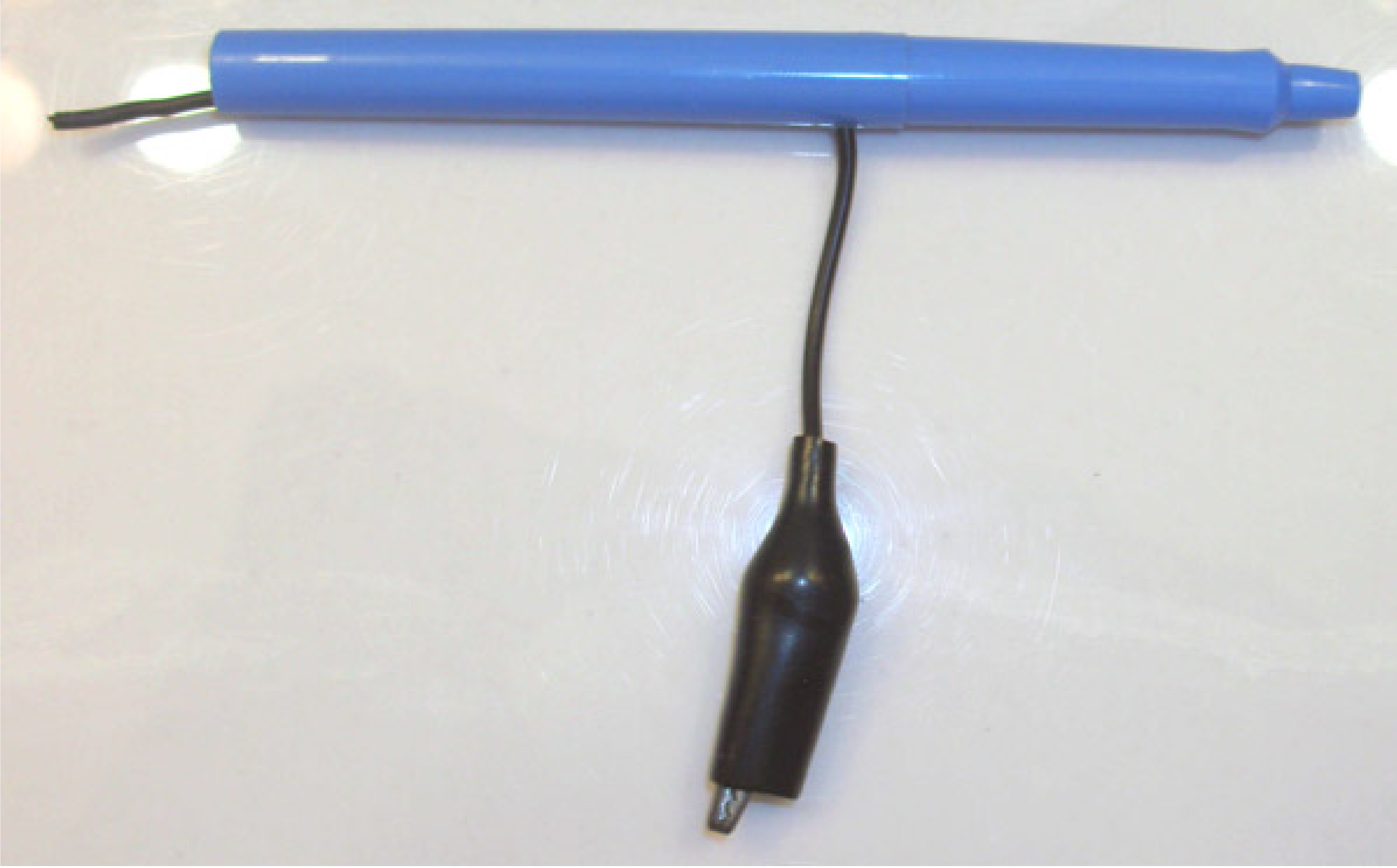

Precision Metals
Stock # 164

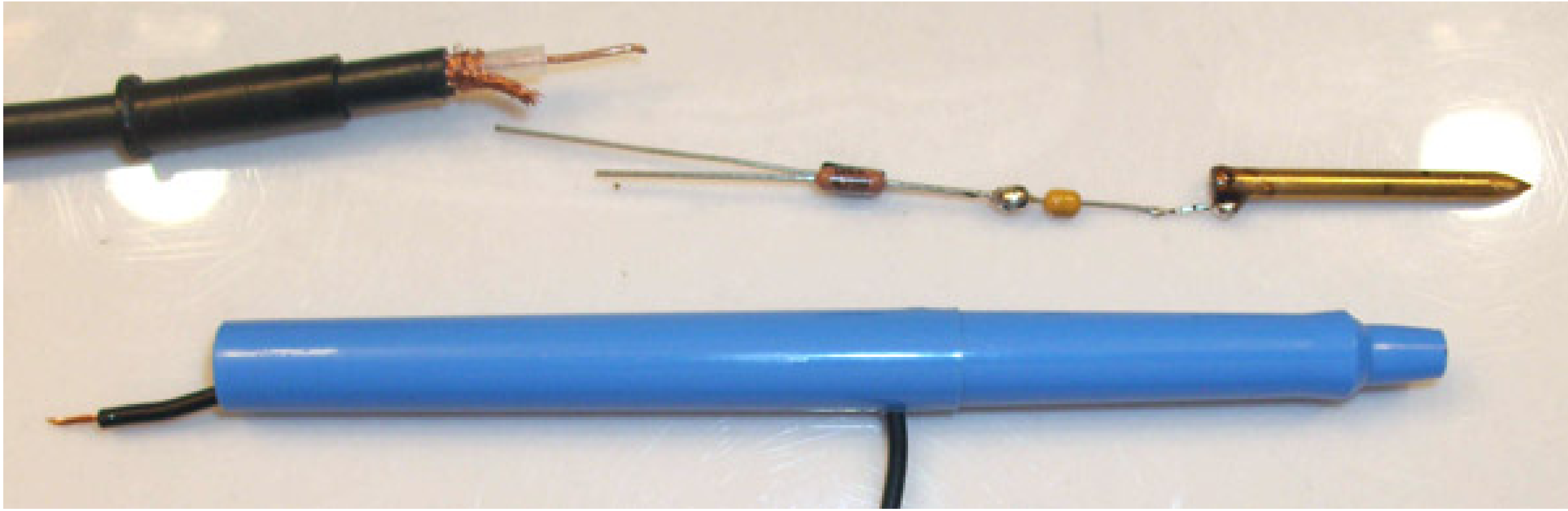


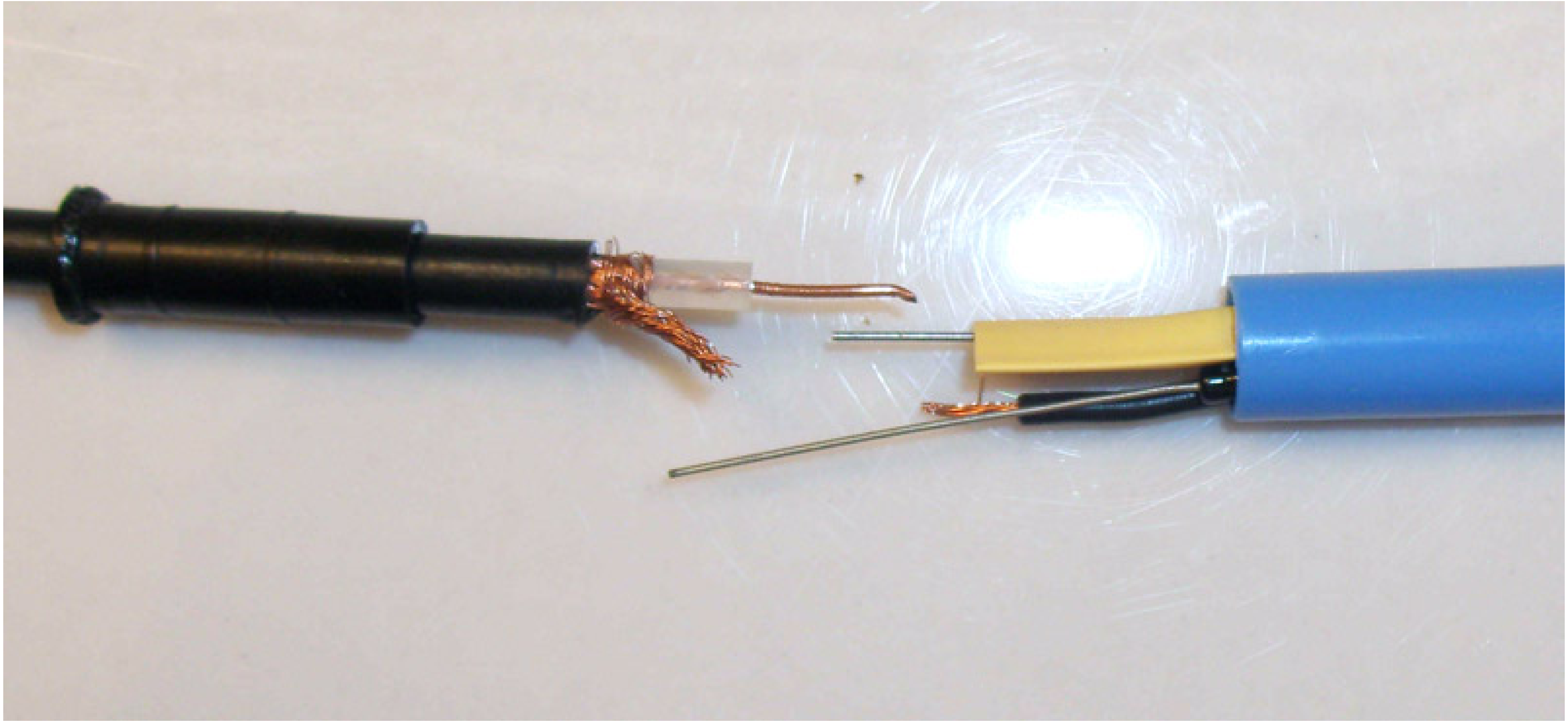

SD

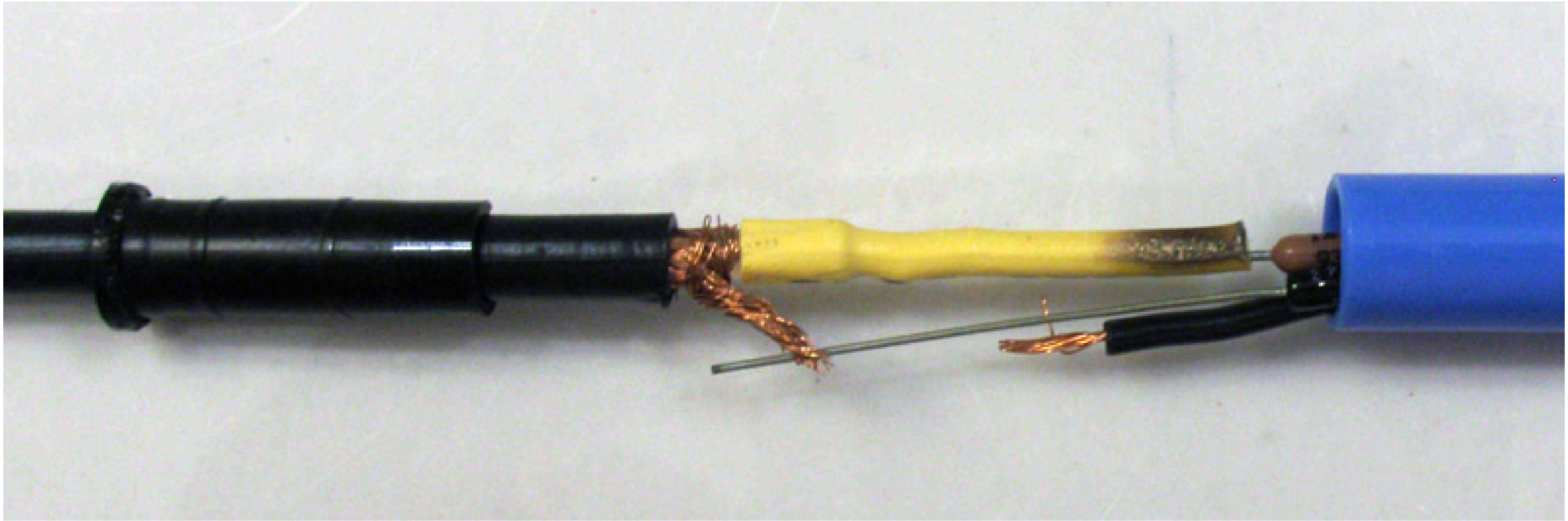

RG 58





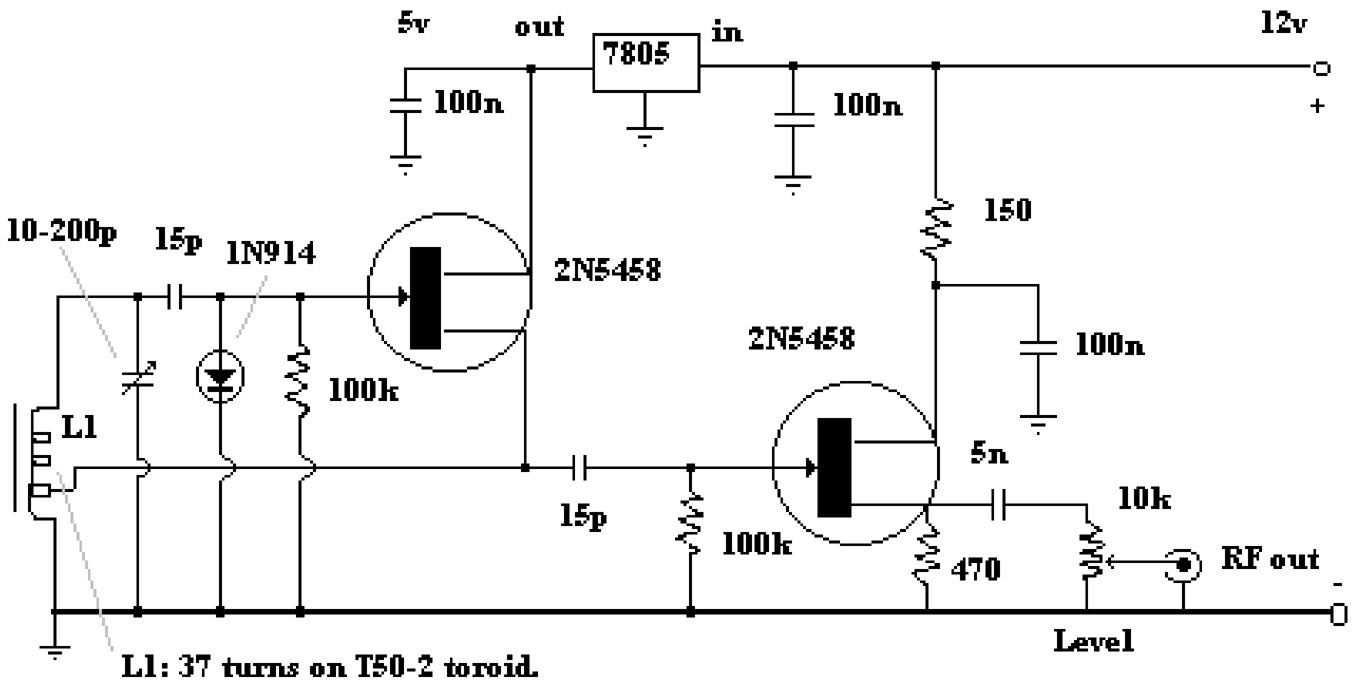







TENMA
72-4025
POWER
AC
DC
A
V
hFE
NPN
PNP
F
Ω
mA
COM
VΩ
10A
DISCHARGE CAPACITOR BEFORE CONNECTING

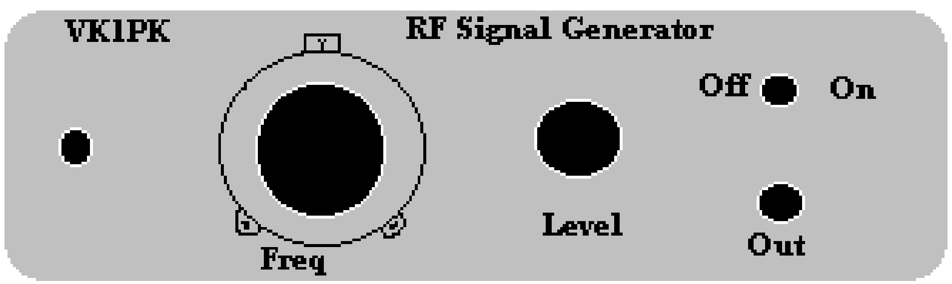
RF Signal Generator



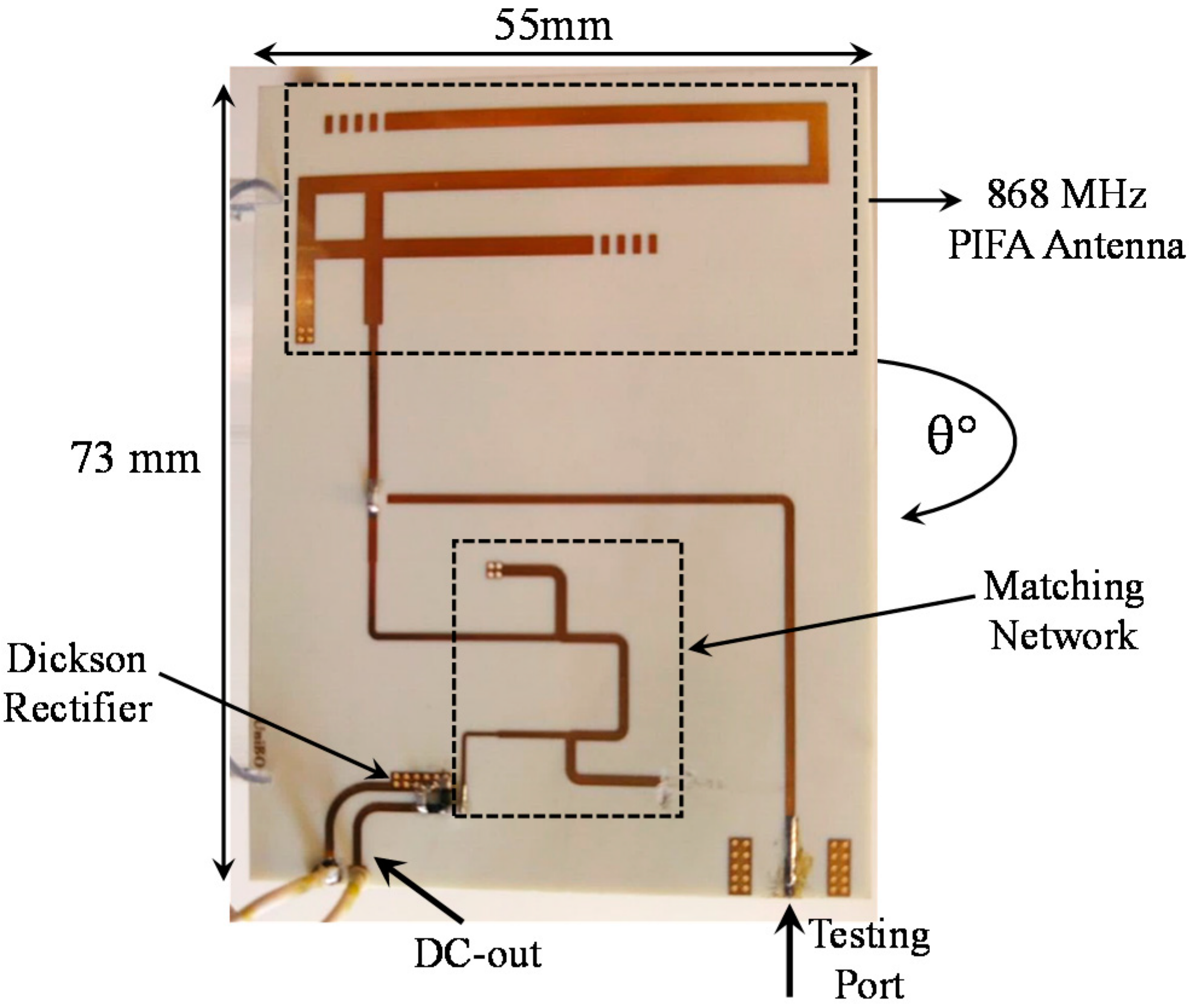
L1: 37 turns on T50-2 toroid.
Source tap 12 turns up from earth.

Coverage: 3-12 MHz approx

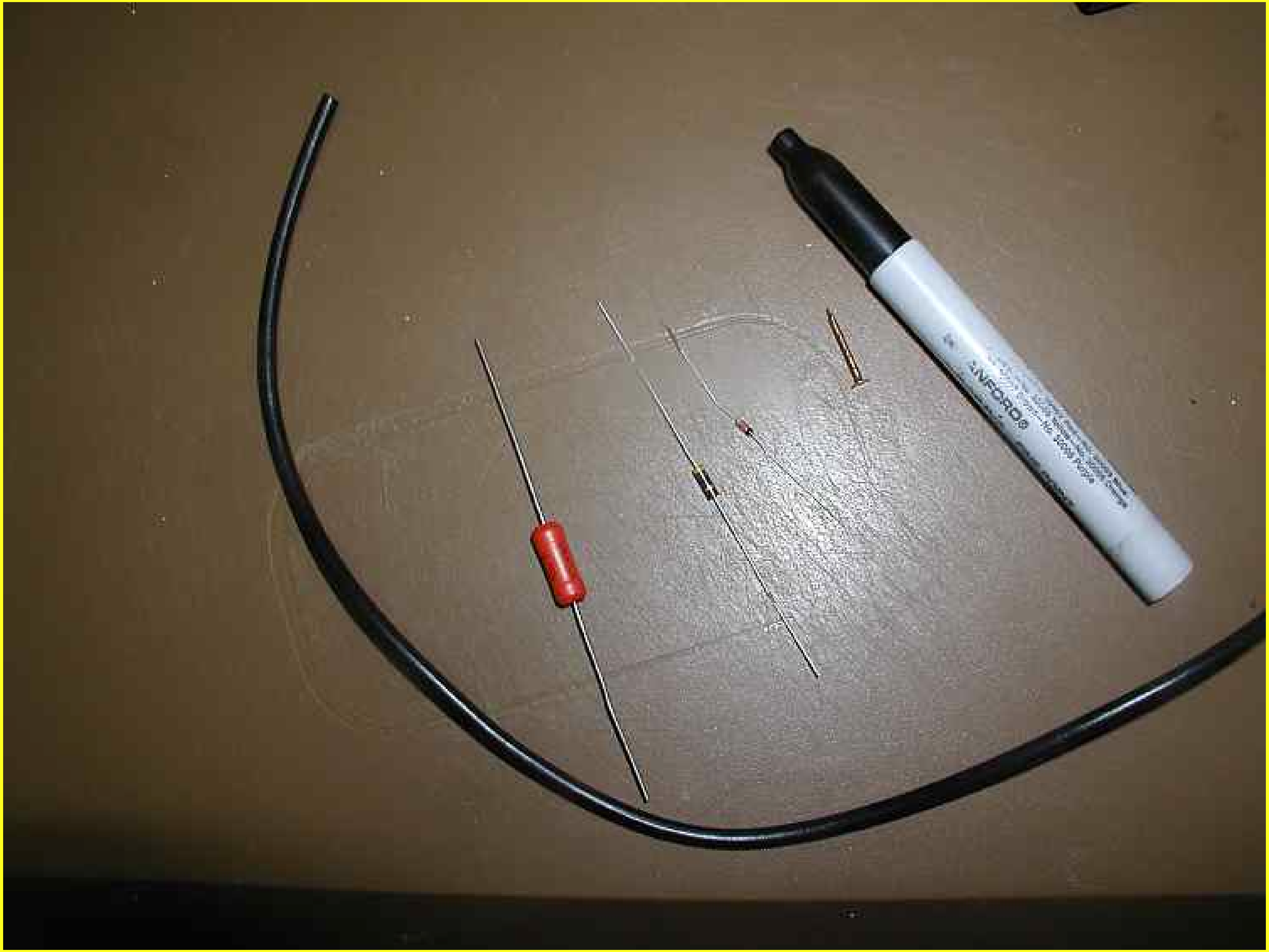
Notes:
1. A vernier reduction drive is desirable.
2. Build signal generator in die cast aluminuim box for best stability.
3. Can work up to 148 MHz on harmonics if care is taken in construction.
4. Any construction method should work but ensure components are rigid.



(C) 1998 VK1PK


55mm
73 mm
868 MHz
PIFA Antenna
θ°
Matching
Network
Dickson
Rectifier
DC-out
Testing
Port

I used a .02ufd cap because it was the perfect physical size, a 4.7 meg resistor, and a 1N34A diode. I had a nice, flexible, p copper nail that would be easy to solder to for a tip.




±10%
200DC


R.F. BANDS
R.F. BANDS
3.0-11.0 MC
850-3000 KC
250-850 KC
11-43 MC
35-120 MC
UNMOD
Signal Generator & Tracer
A.F.
ATTENUATOR
PREAMP
OUTPUT
SIGNAL

....Top Quality, Low Prices, Dependable Service

LAFAYETTE COMBINATION SIGNAL GENERATOR AND SIGNAL TRACER

NOT A KIT — FACTORY WIRED AND TESTED

SIGNAL GENERATOR

- Covers From 250 KC to 120 MC in 5 Bands
- High Stability Electron Coupled Oscillator
- Attenuator For Both RF and Audio Circuits

SIGNAL TRACER

- Hi-gain Cascode Pre-amplifier
- Front Panel Output For VTVM, Scope or Phones
- Low Distortion Triode Output Stage
- Separate R.F. and Audio Signal Probes

Two test instruments in one! The Signal Generator will serve as a full service instrument and the Signal Tracer will follow any signal whether generated by a broadcasting station or injected by the Signal Generator section. When used in combination, with no dependence on outside signals, the unit provides ideal service, for unlike any standard signal tracer, it first injects its own signal then traces that controllable signal to locate the source by standard signal tracing technique. Designed for use with AM, FM, TV and audio circuitry. Features 5 frequency ranges and an attenuator switch to control both the R.F. signal (either modulated or unmodulated) and the 400 cycle audio tone. Front panel output jacks which can be used for oscillioscope, VTVM or earphone connections. Housed in a beautiful crackle finish steel cabinet with a deep etched aluminum panel. Dimensions: 7½x9½x5¾". Complete with 2 probes. Shpg. wt., 9 lbs.

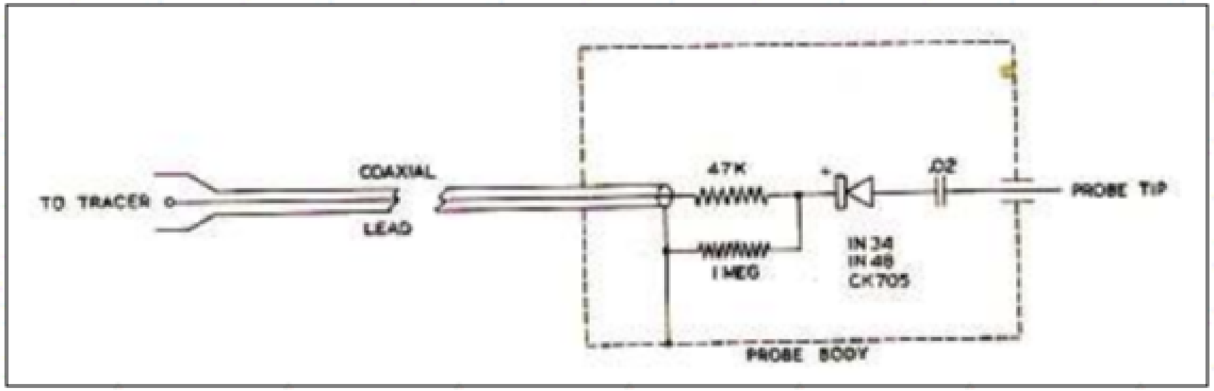
R 0102 .... Net 24.95

SPECIFICATIONS

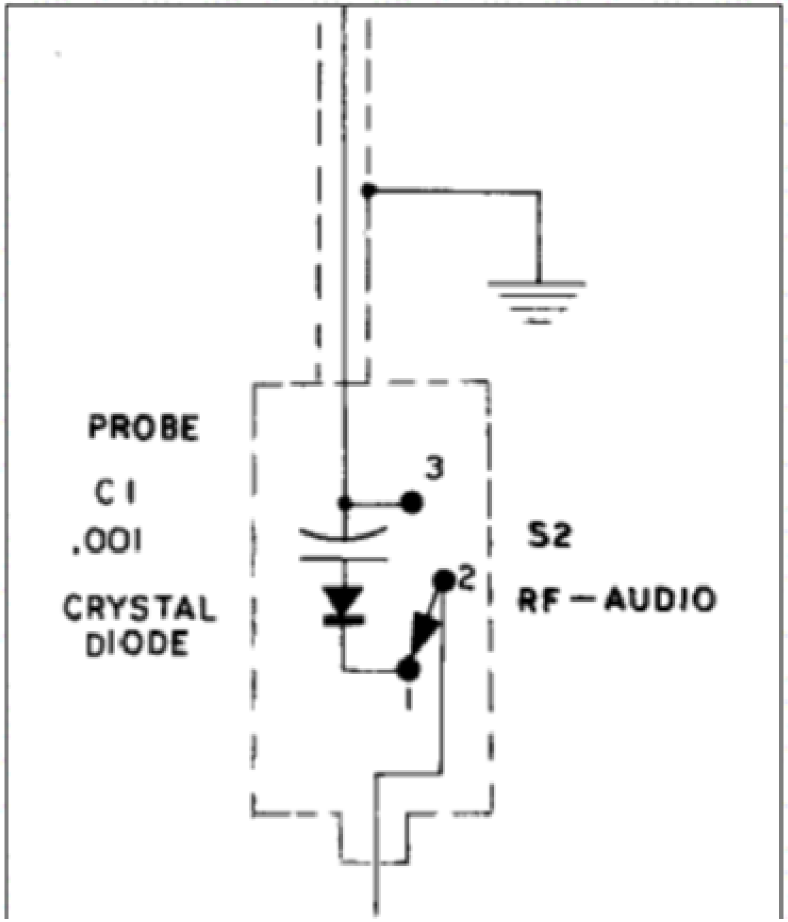
RANGE: Band A: 250KC to 850KC; B: 850KC-3000KC; C: 3.0MC to 11MC; D: 11MC to 45MC; E: 35MC to 120MC; 400cps audio signal; modulation slide switch, RF/AF attenuator and power switch; Signal output jack; AF input jack, 2 Preamp. output jacks. 4½" alnico 5 speaker. Tubes: 5687, 6350, 6AG5 plus sel. rectifier.

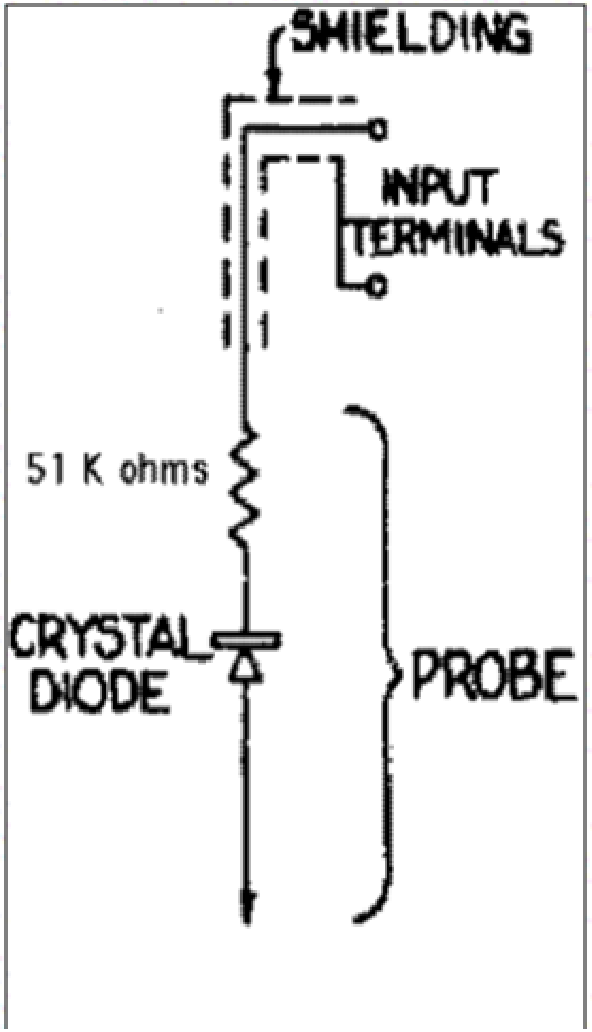
Made in U.S.A.

ONLY 24.95

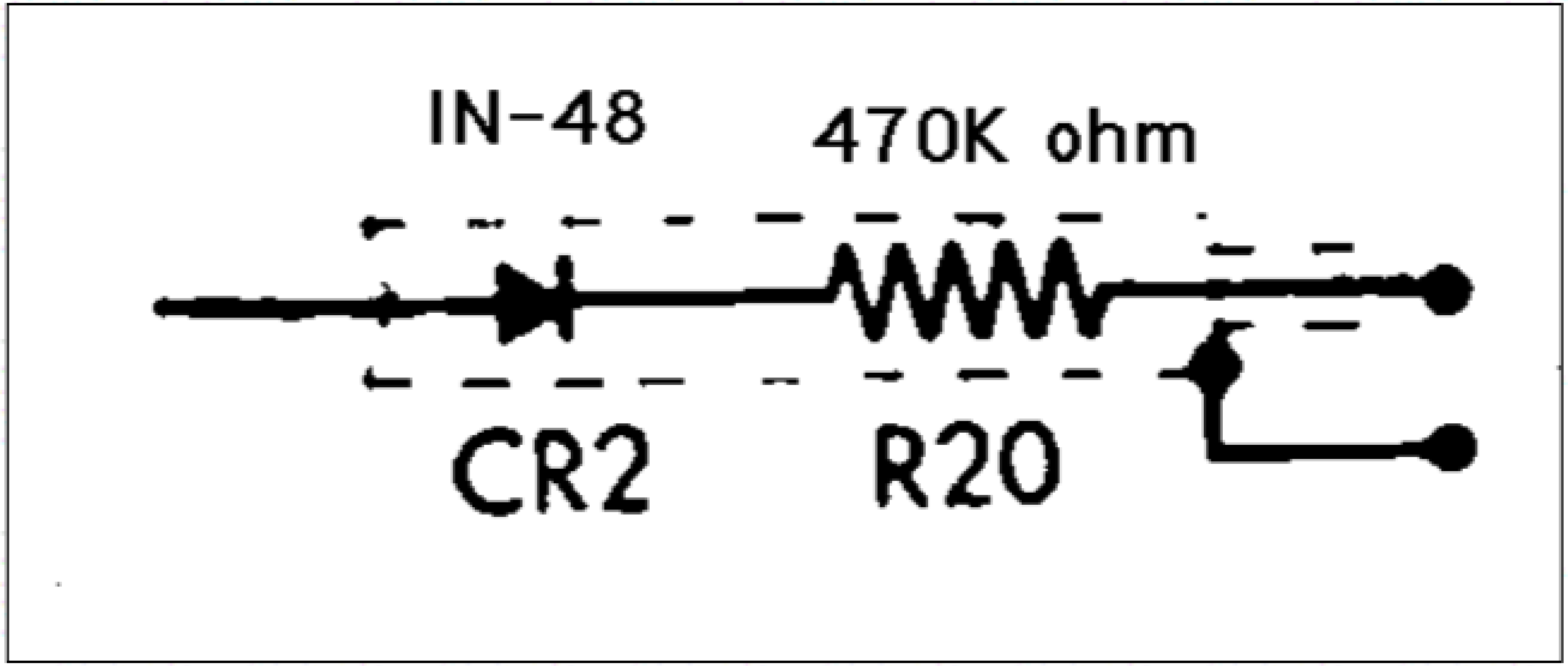


Heath T-3 signal tracer probe

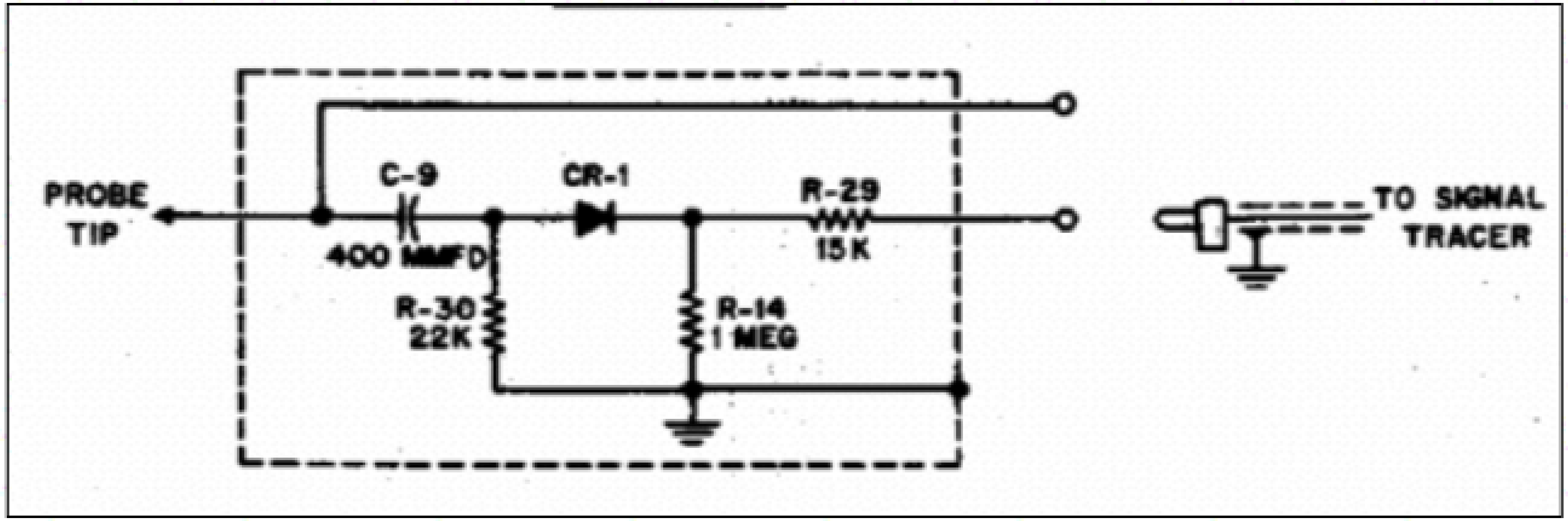




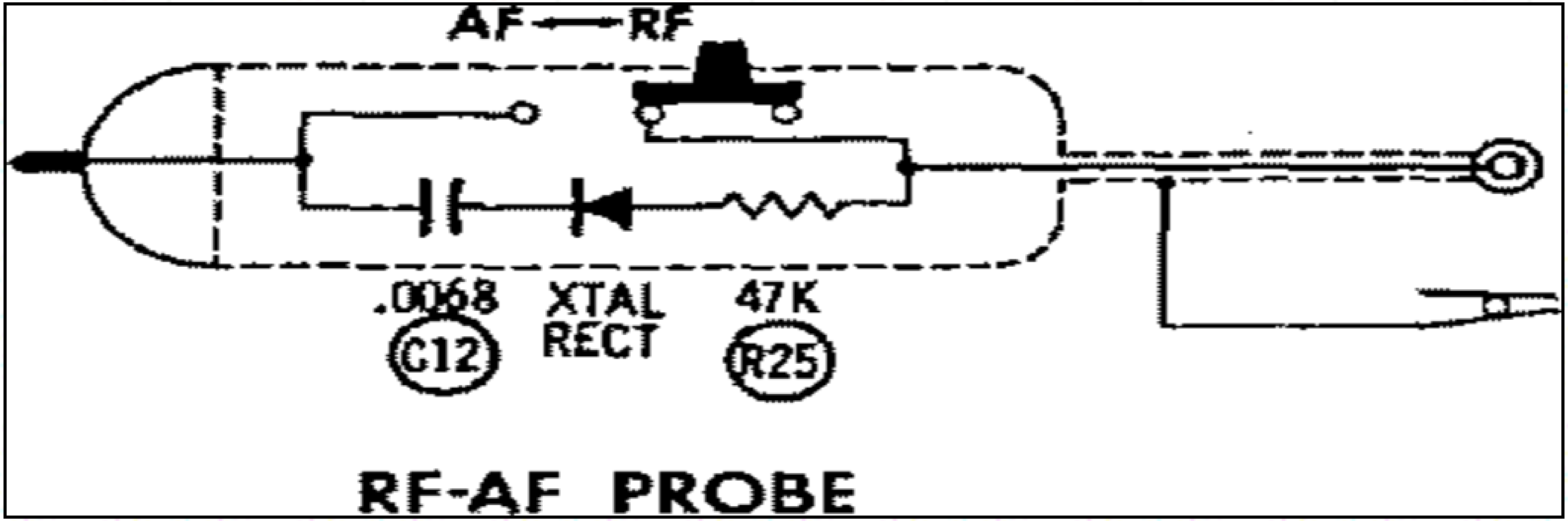
Heath T-4 or IT-12 signal tracer probe (left) - - - - Eico 145 signal tracer probe (right)



Eico 147a signal tracer probe

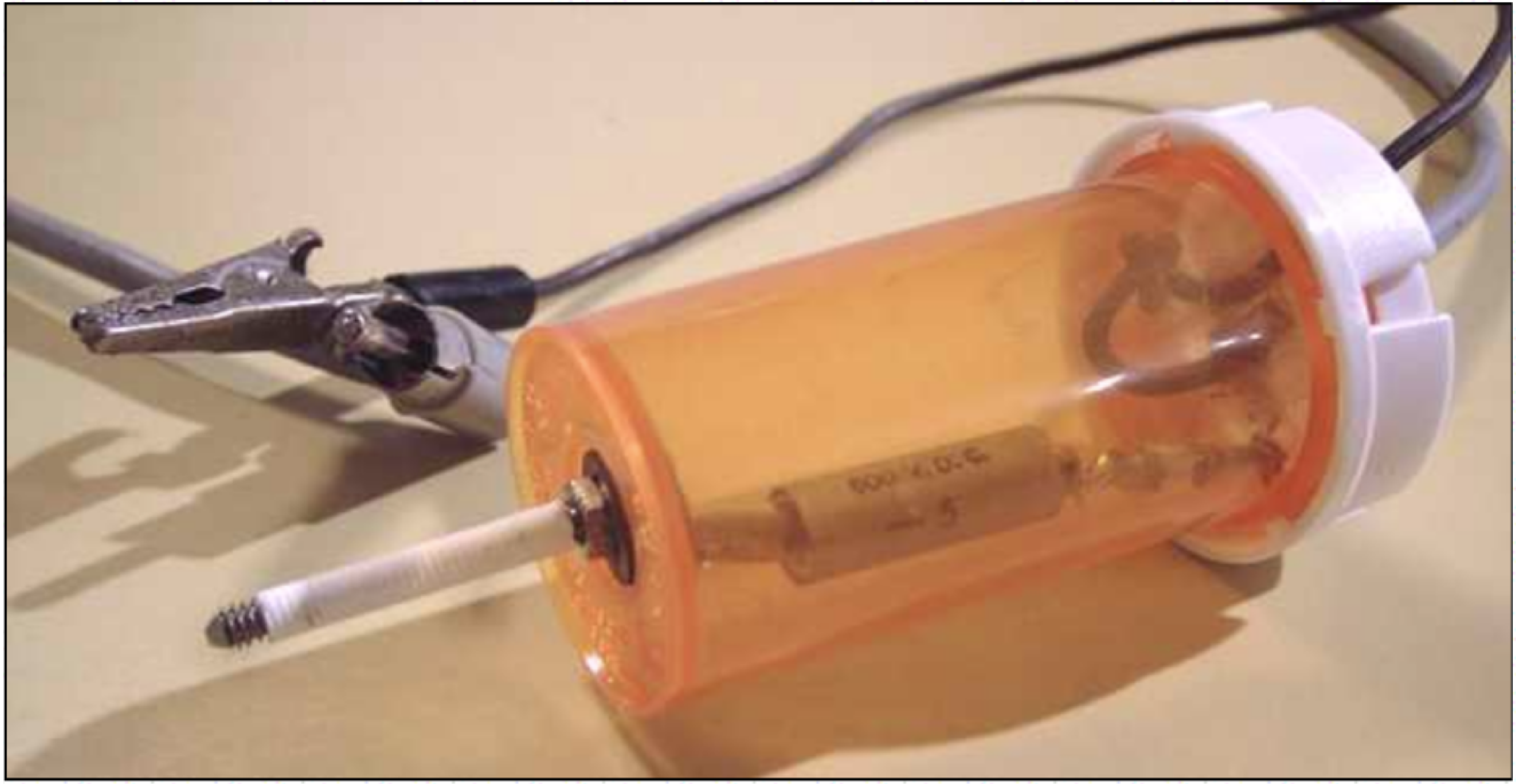


Knight-kit signal tracer probe



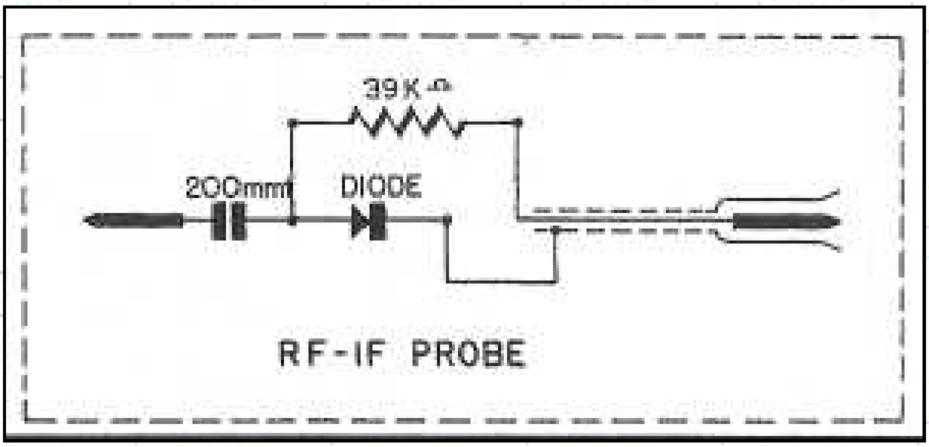
PACO Z-80 signal tracer probe

Pill bottle signal tracer probe

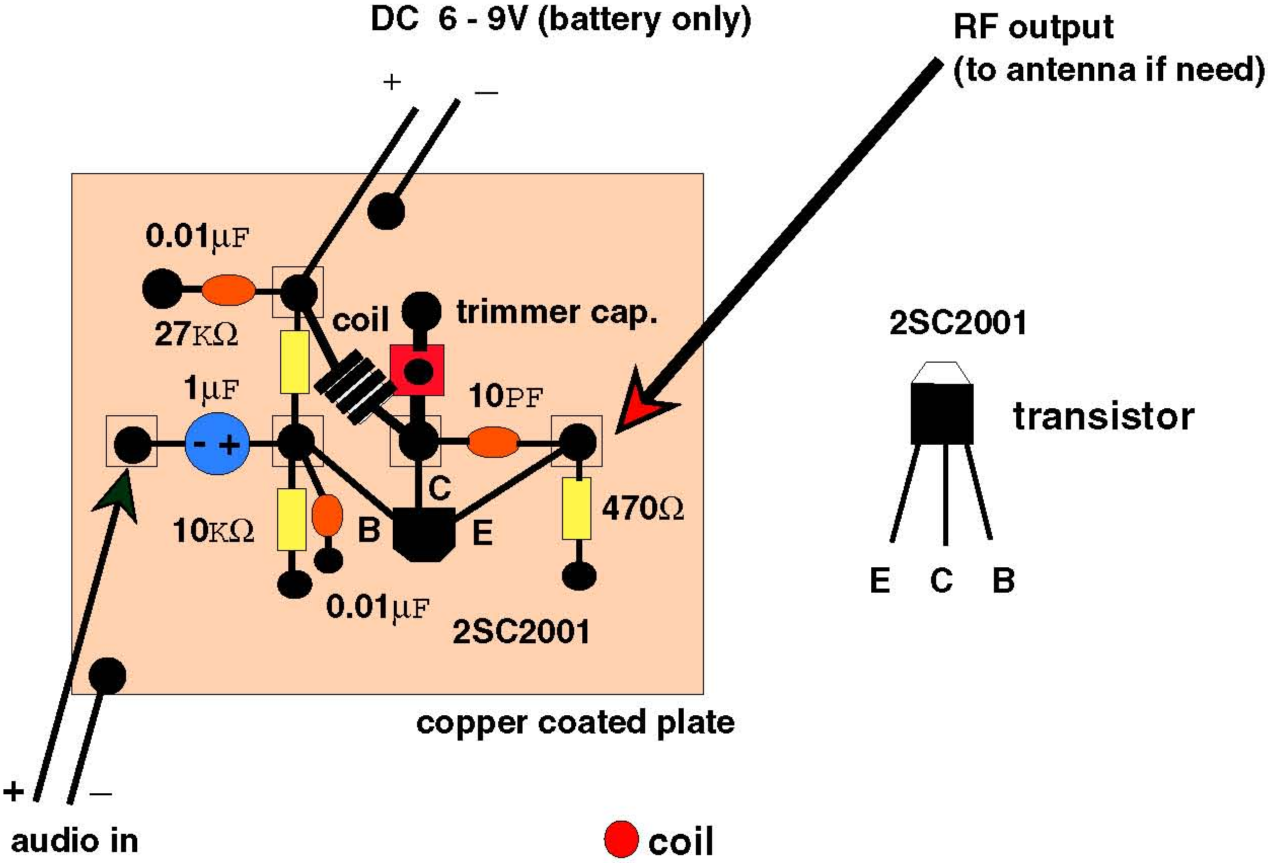


KIS (Keep It Simple) pill-bottle signal tracer probe

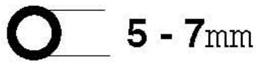
Accurate Instrument model 153 and its RF probe schematic courtesy of John Lescaud.



Making the simplest Transmitter



- **coil**
  - 3 - 4 turns by coated 0.8 mm wire



- **soldered point:**
  - : direct to the ground

  - : insulated from the ground

- **registers**
  - 470 Ω *(yellow-violet-brown)*
  - 10K Ω *(brown-black-orange)*
  - 27K Ω *(red-violet-orange)*

- **capacitors**
  - 10 PF
  - 0.01 μF *(103)*
  - 1 μF

- **trimmer capasitor 20PF**

2005-03-16 by Tetsuo Kogawa

Design – Physical System

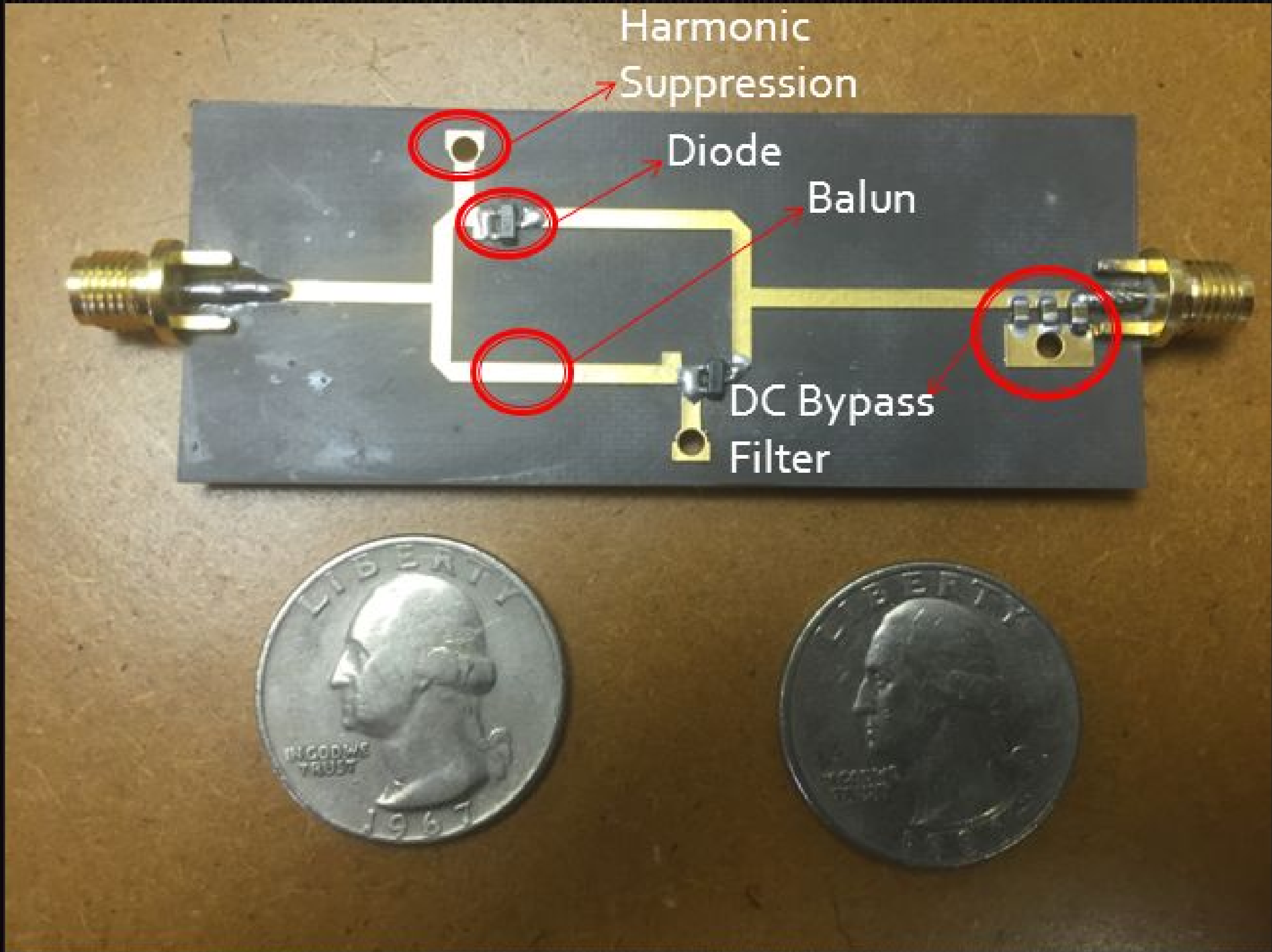
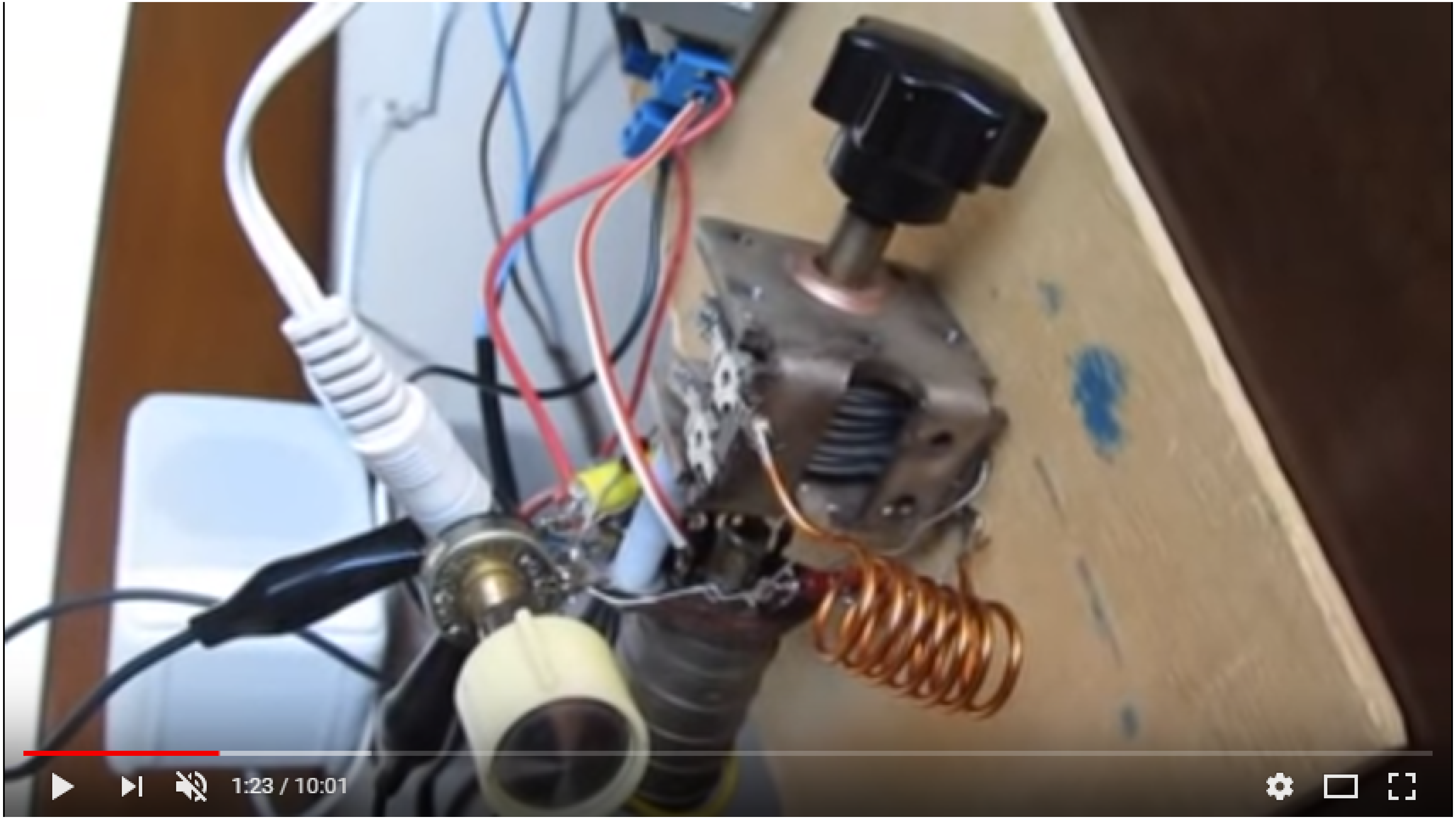
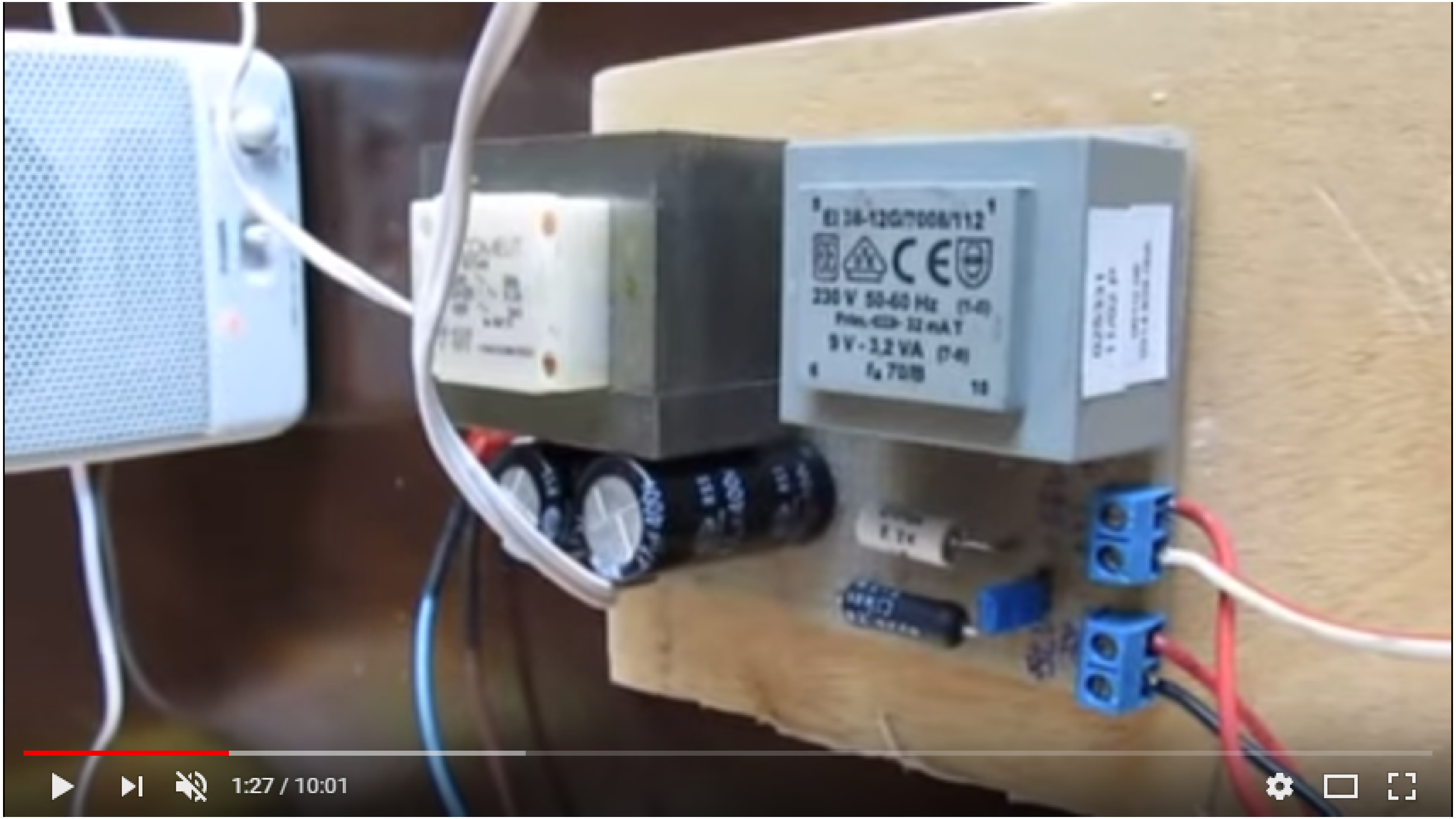
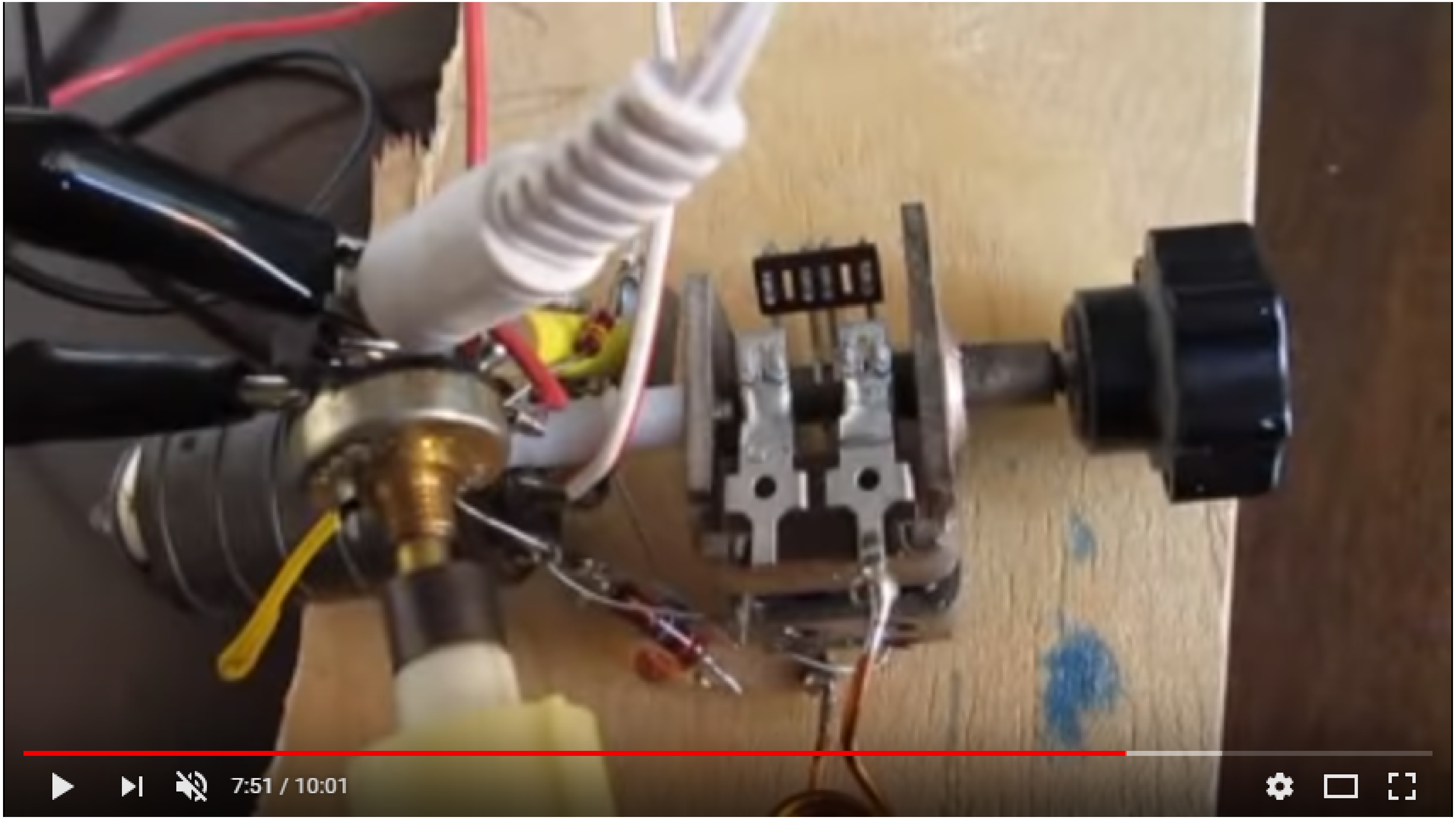


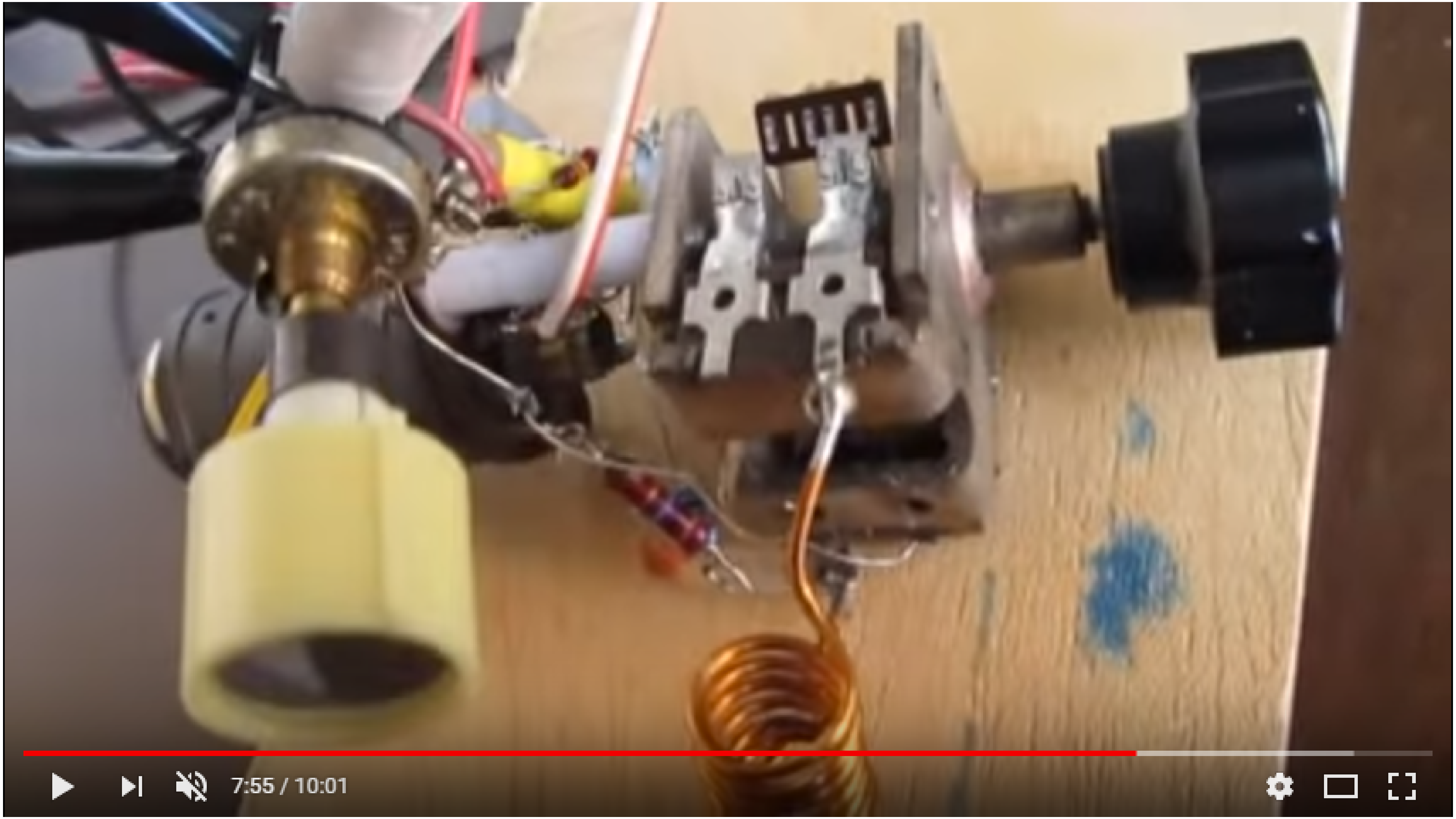
Fig 5. RF to DC converter

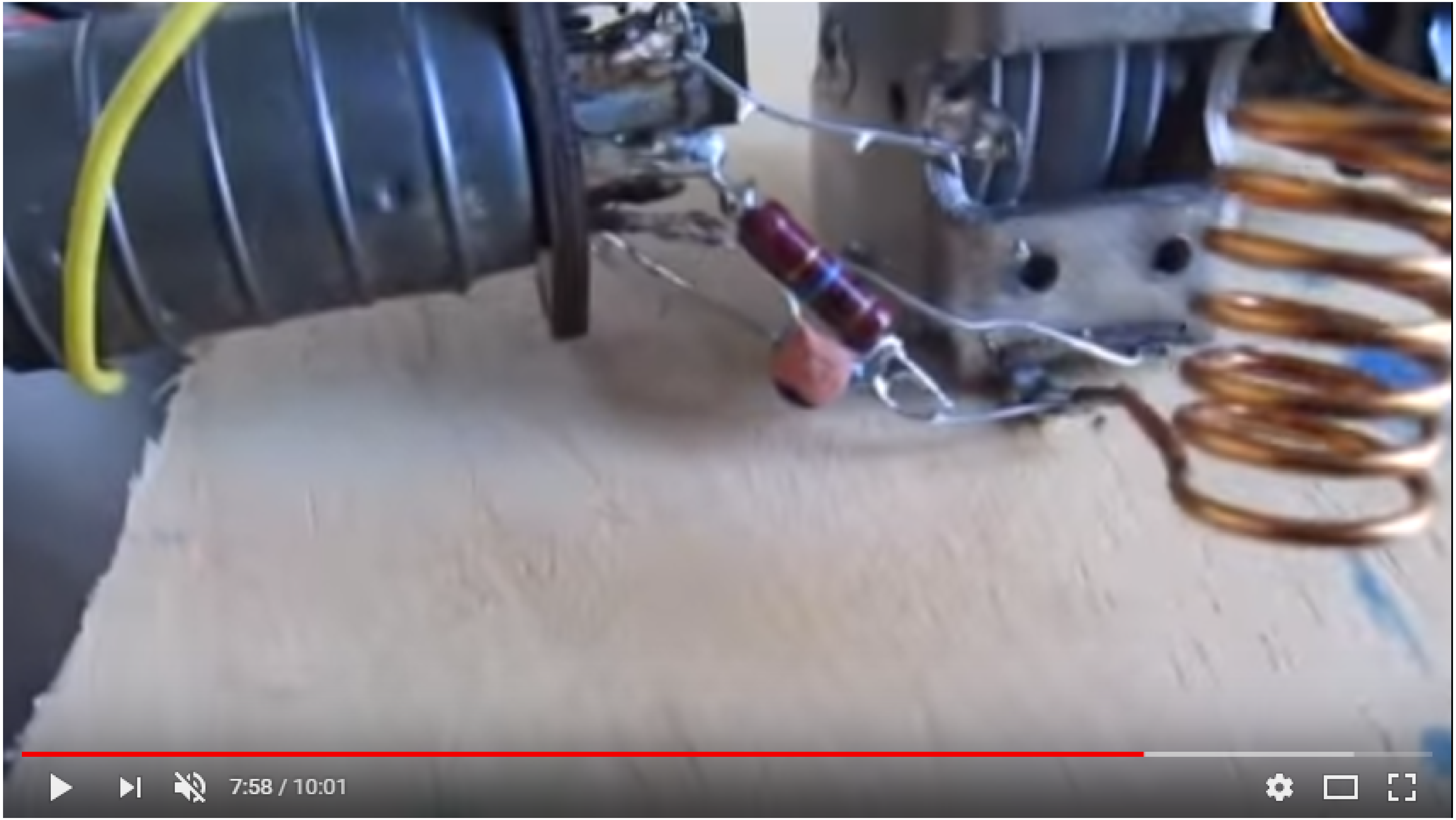


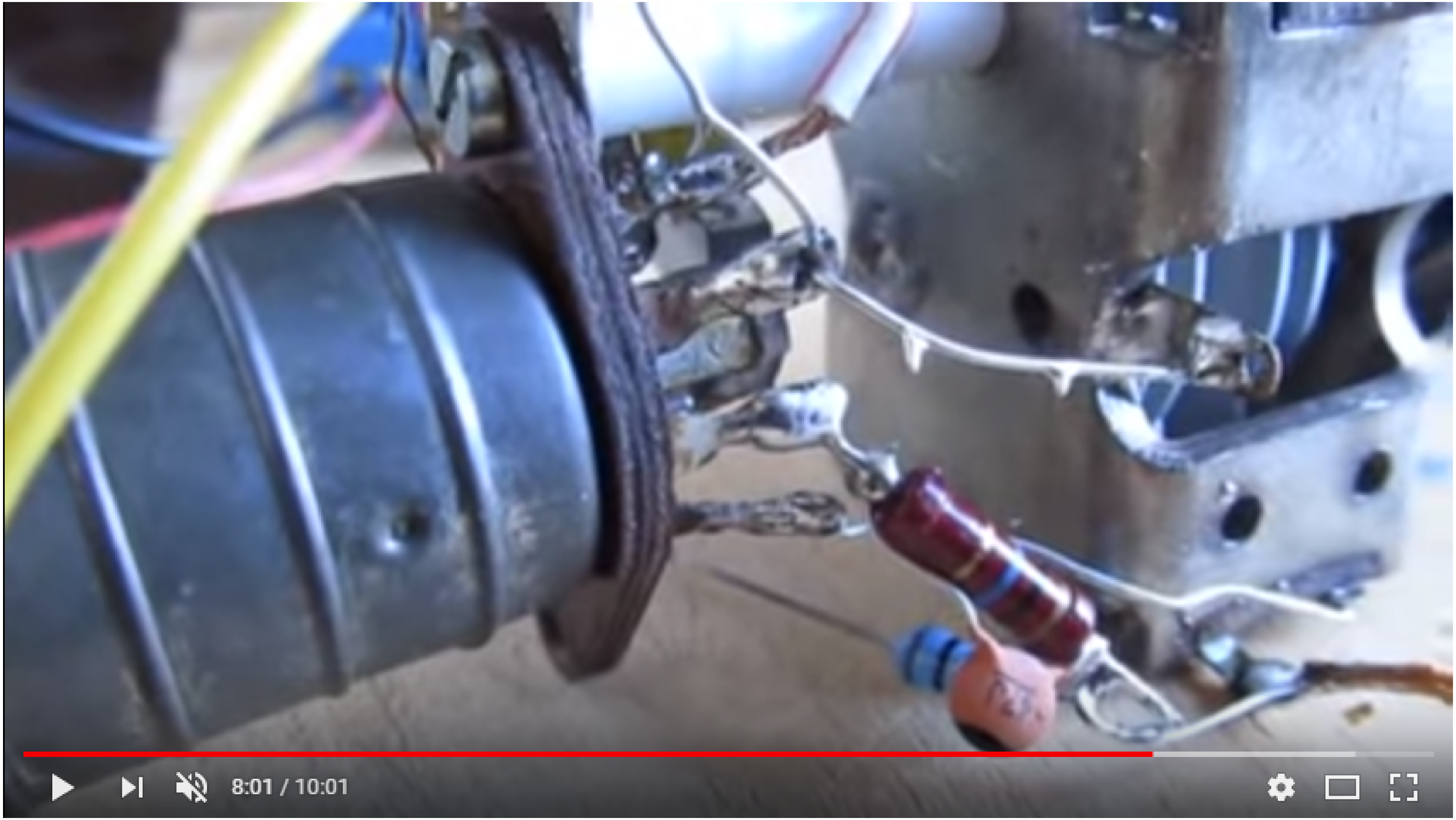
Ricevitore in superreazione con valvola ECC81 12AT7 Primo montaggio.mp4

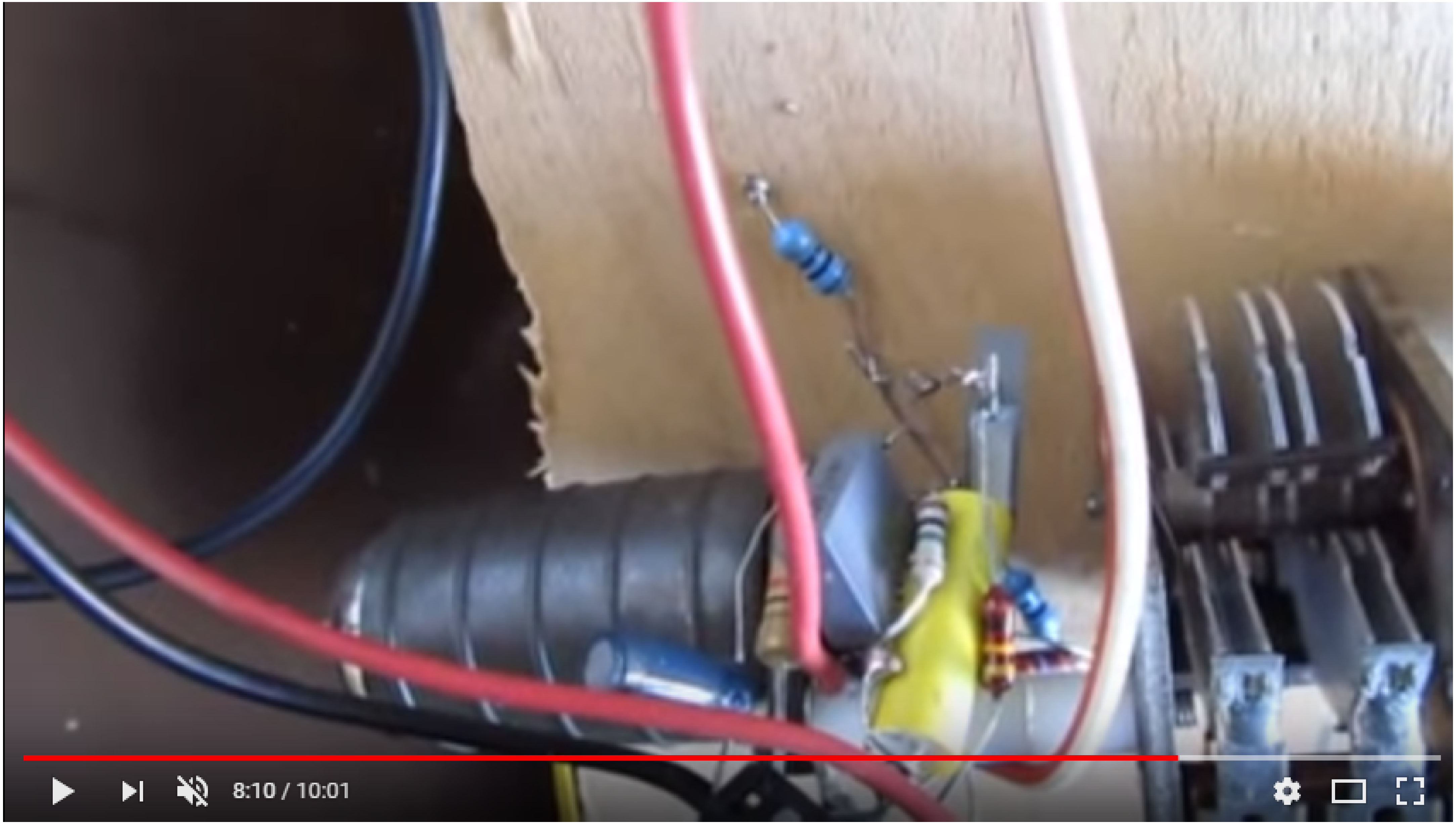

1:27 / 10:01
230 V 50-60 Hz
9 V - 3,2 VA

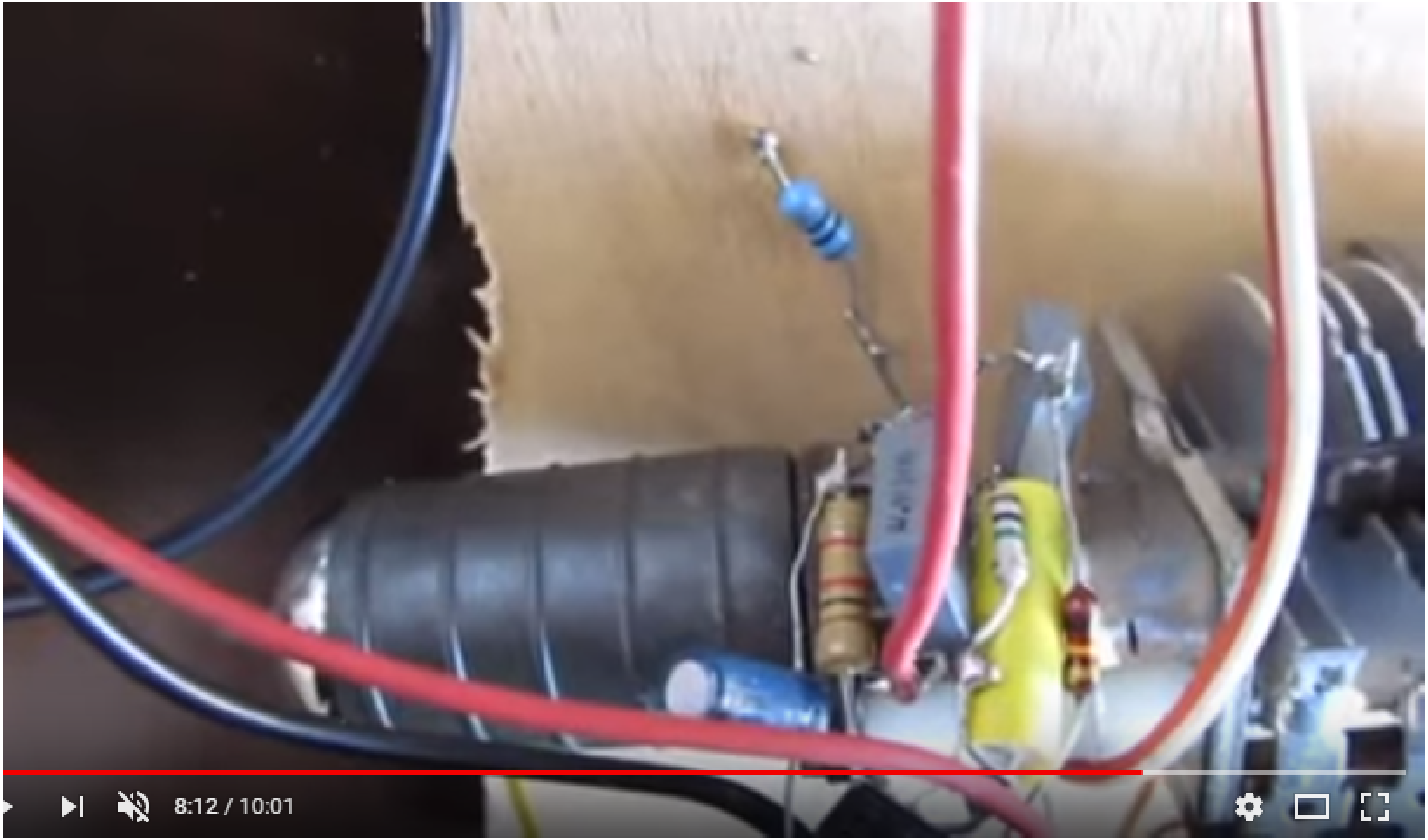

7:51 / 10:01

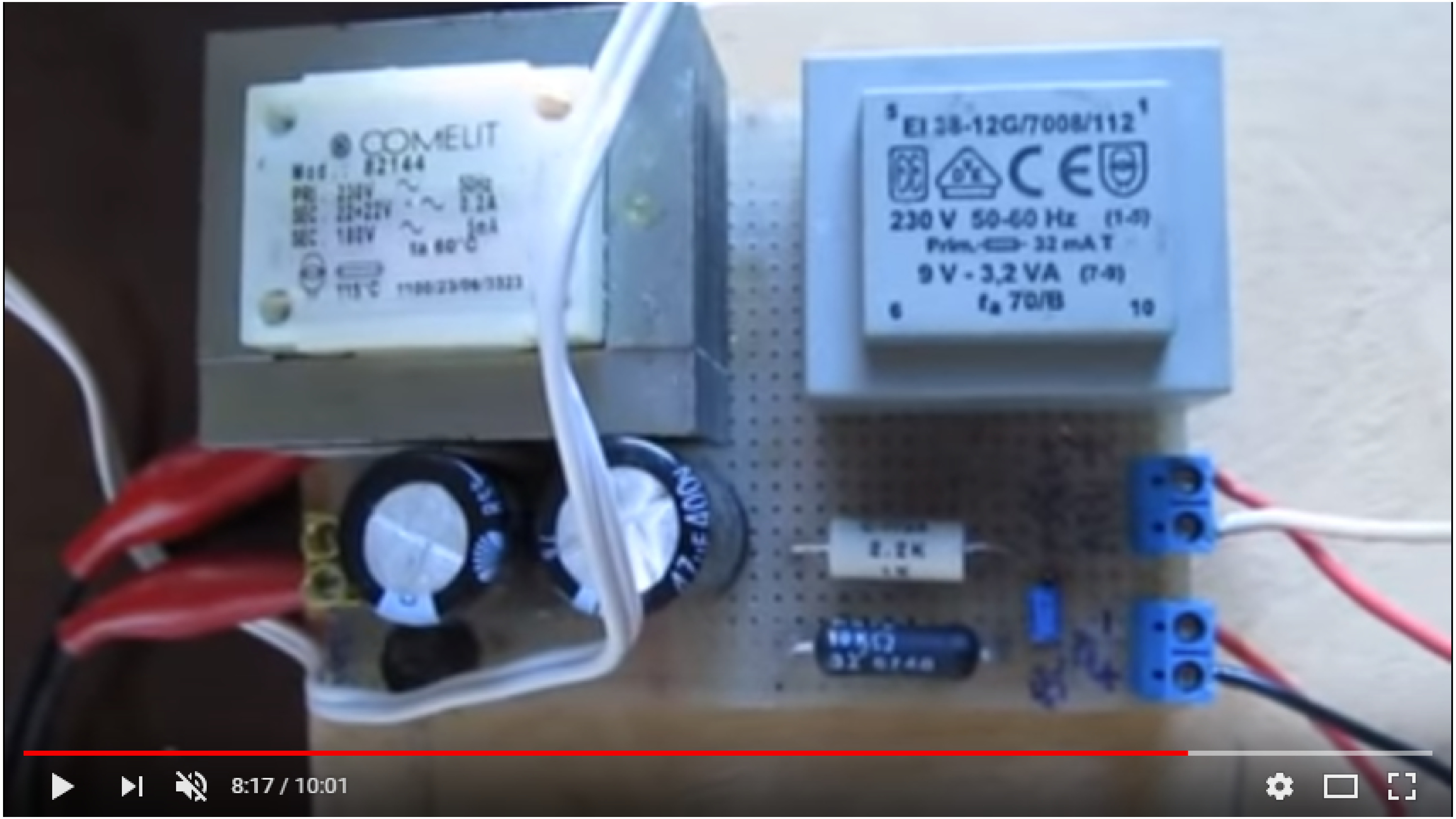

7:55 / 10:01

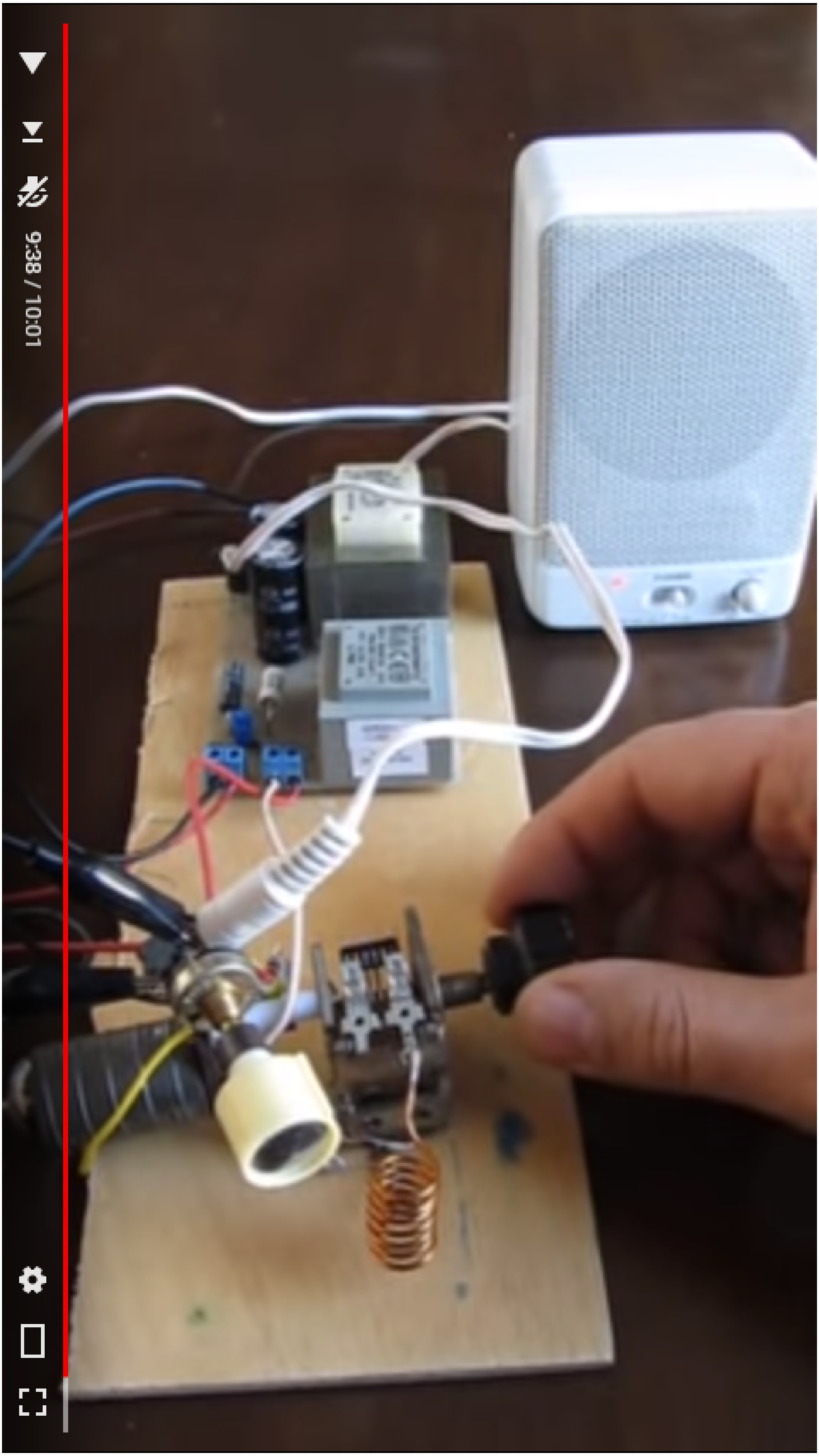

7:58 / 10:01


8:01 / 10:01

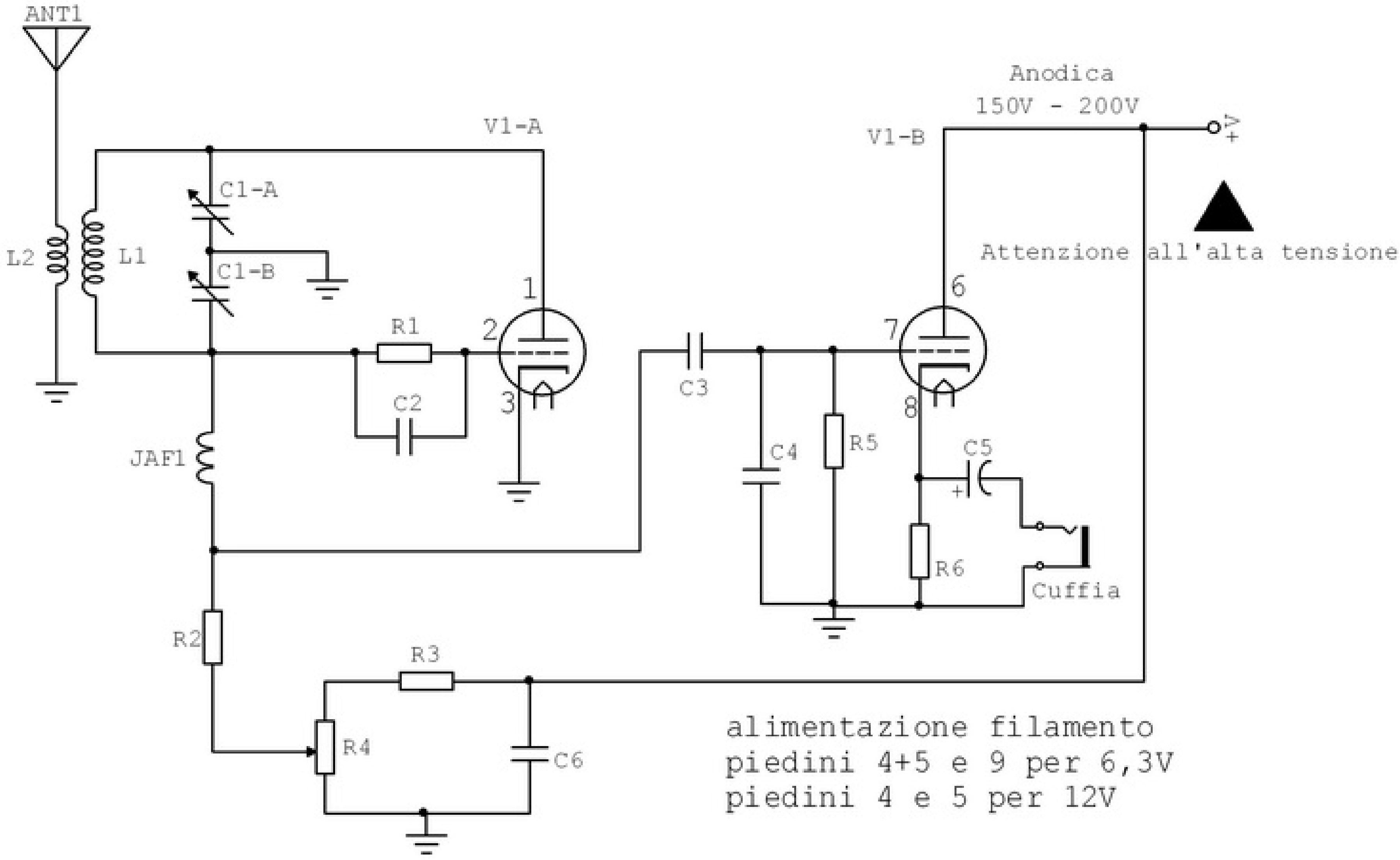

8:10 / 10:01


8:12 / 10:01

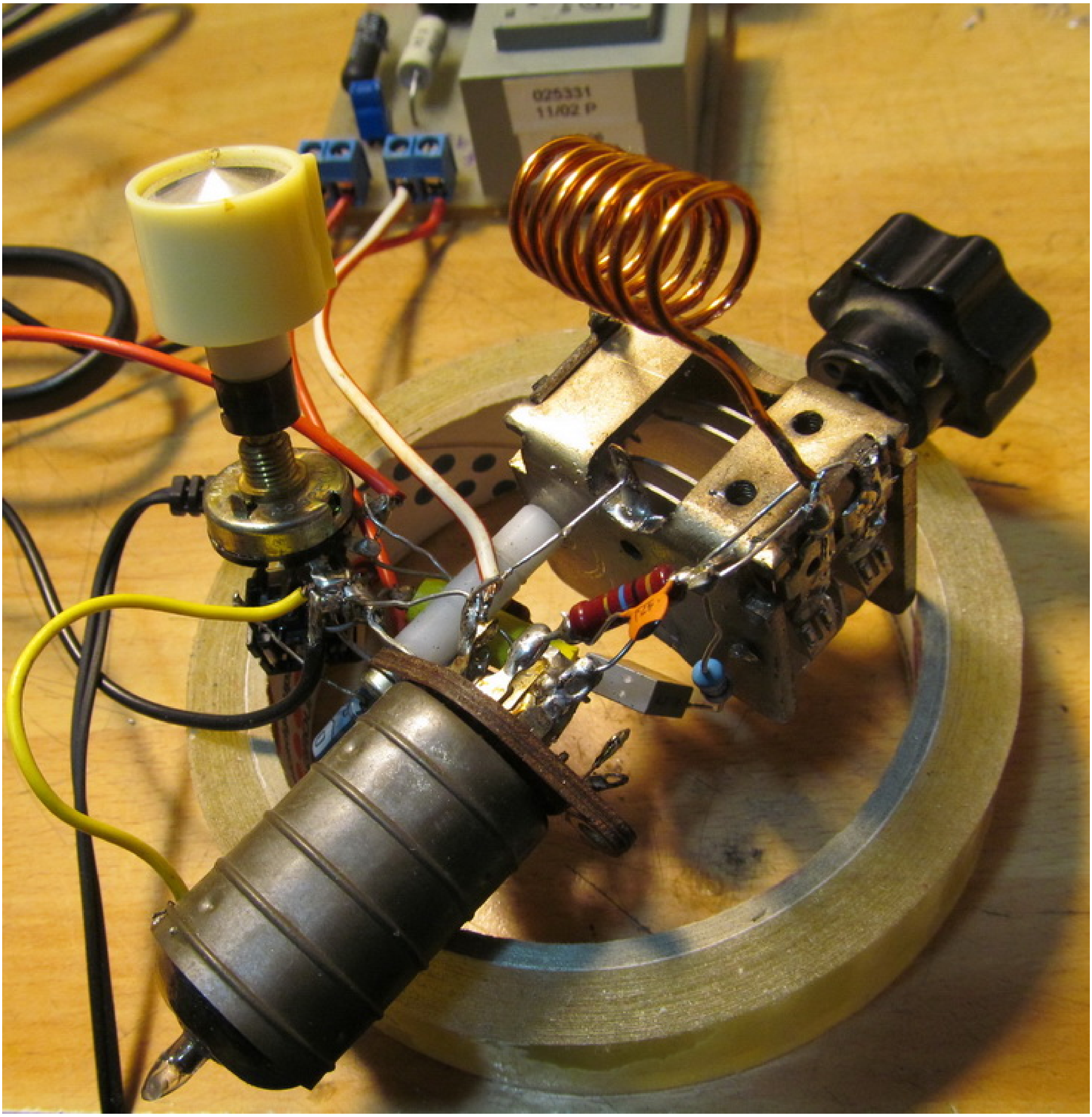

COMELIT
230 V 50-60 Hz
9 V - 3,2 VA
8:17 / 10:01

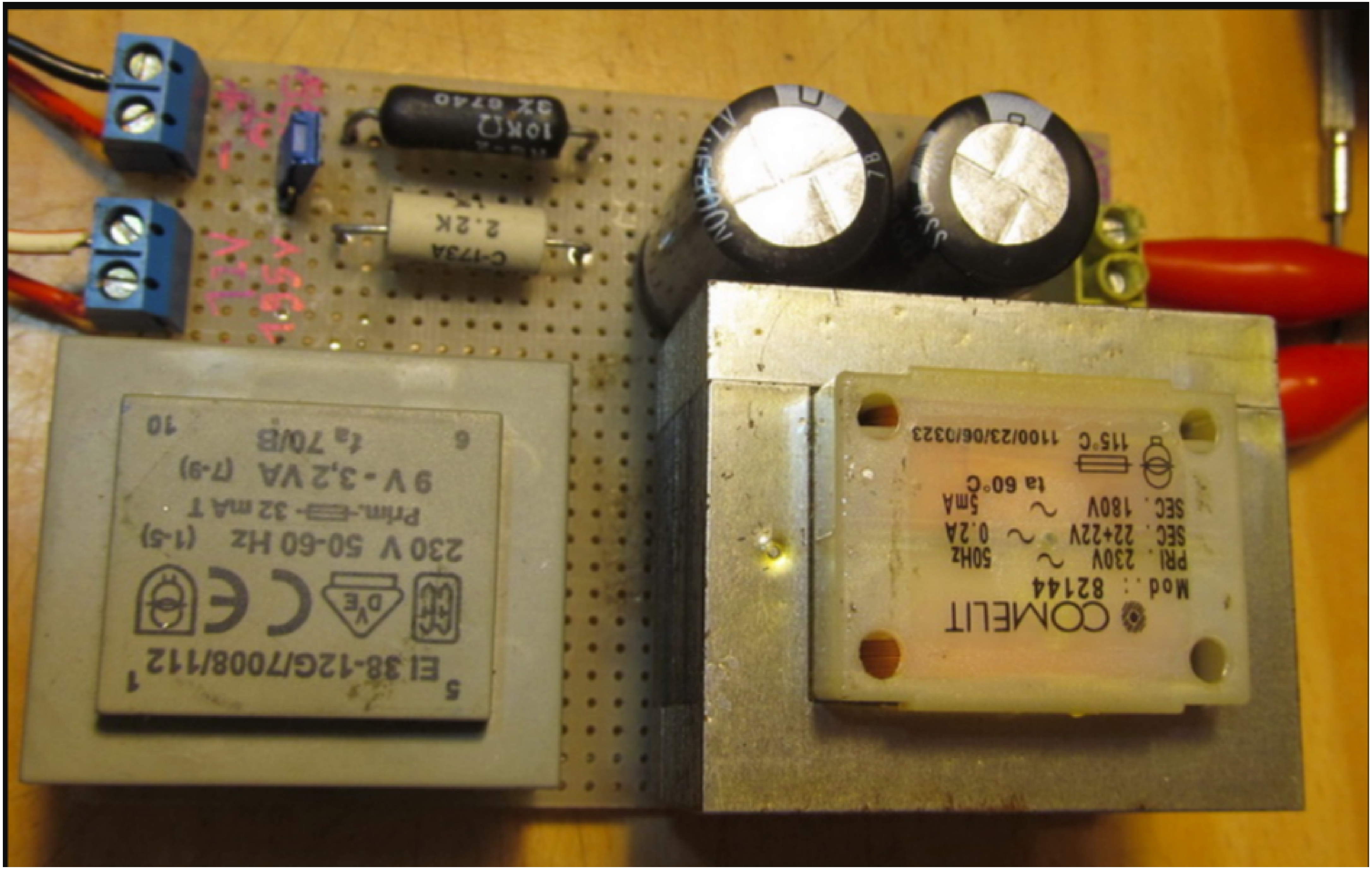

9:38 / 10:01

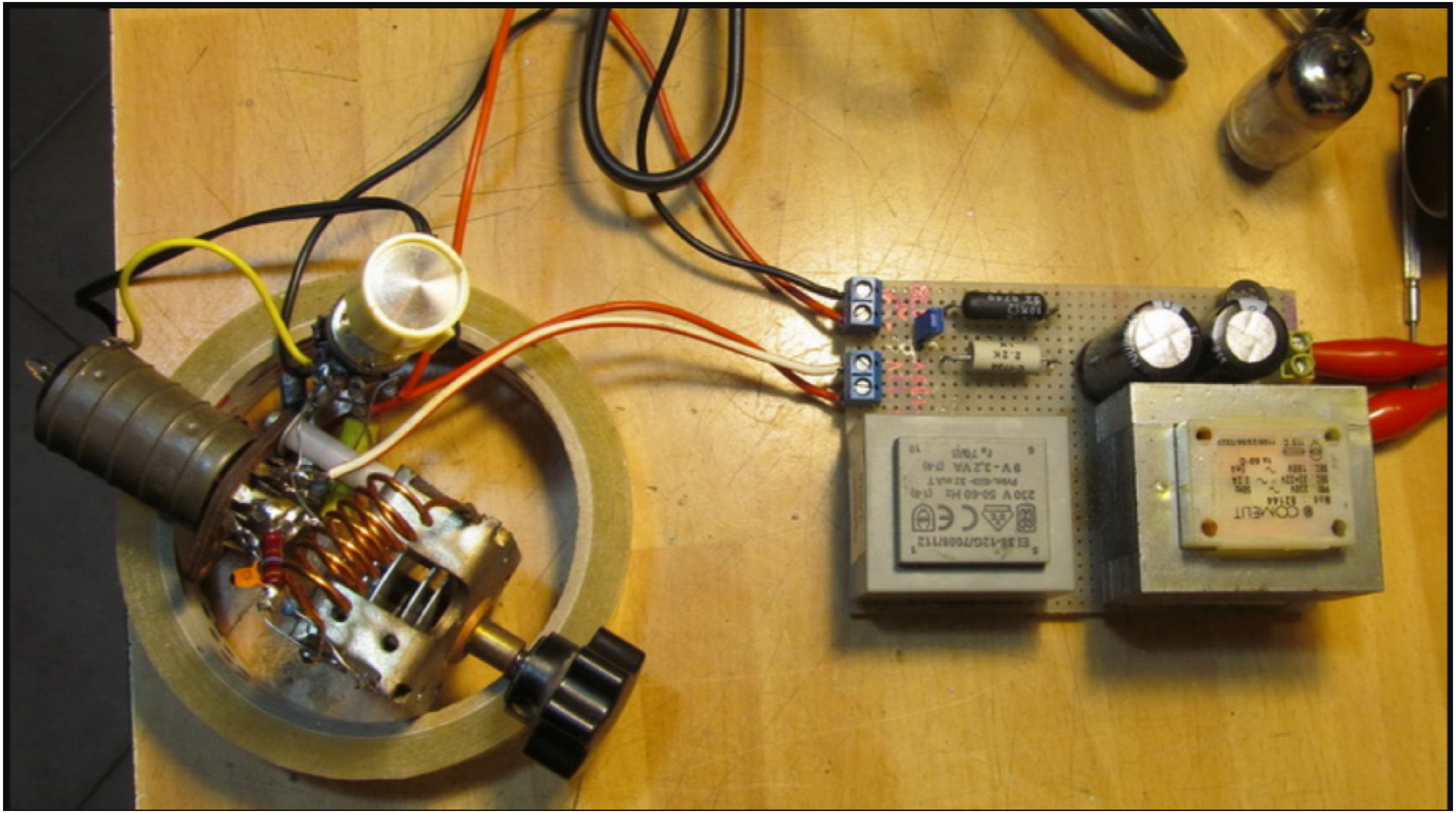
Superreaction receiver with ECC81
Regenerative RX with 12AT7



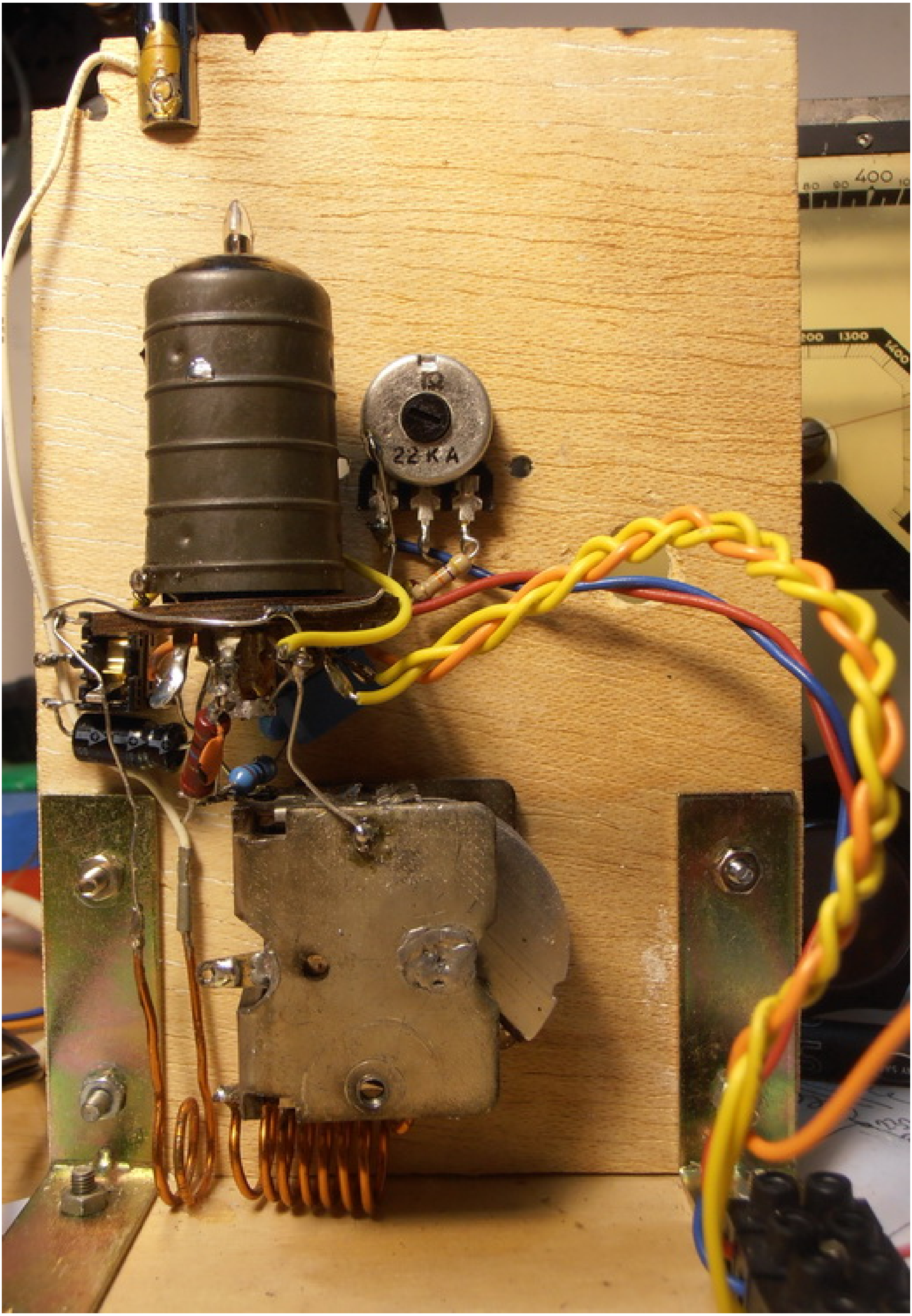
Ricevitore FM in super reazione con ECC81-12AT7

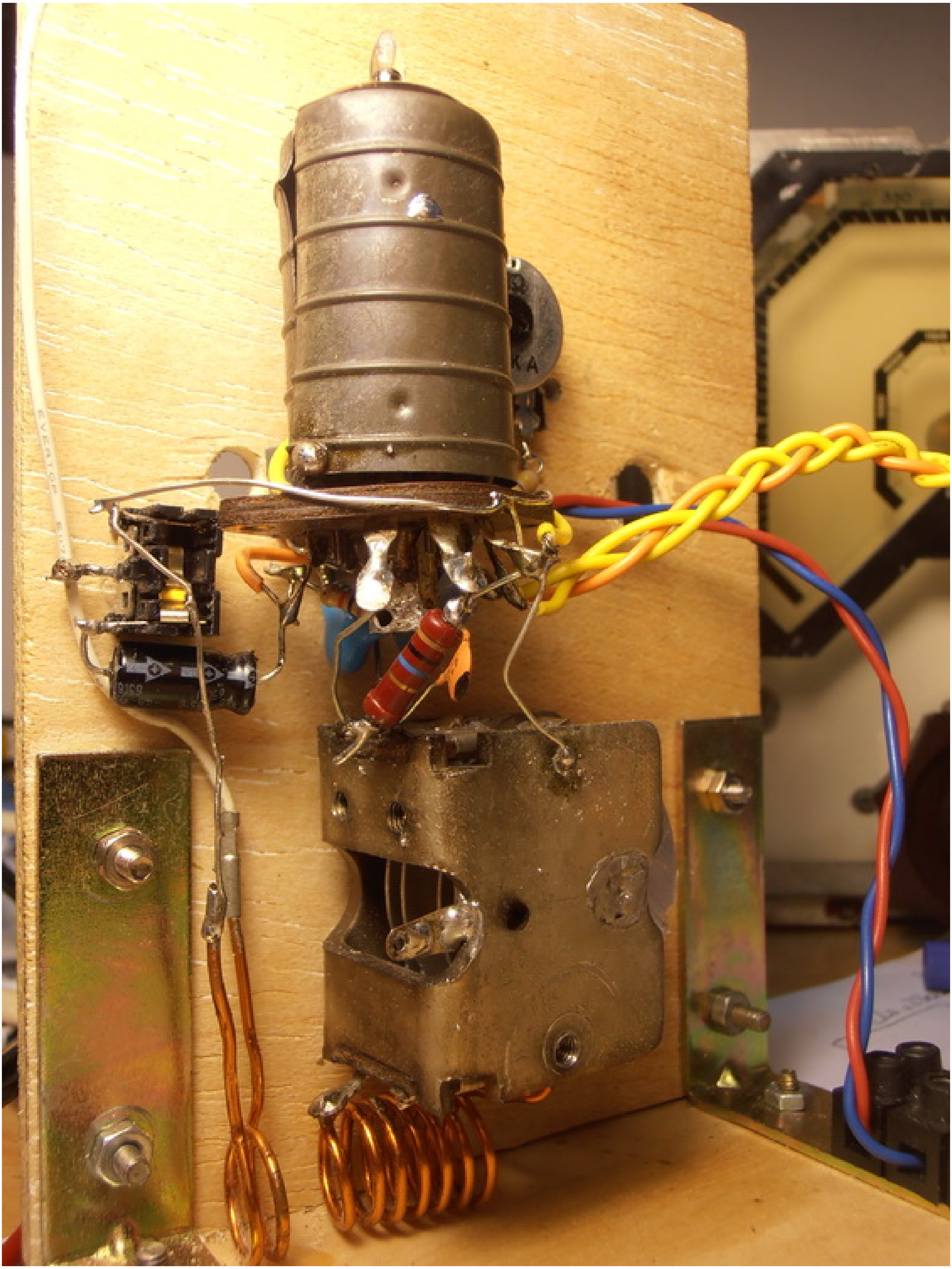

025331
11/02 P

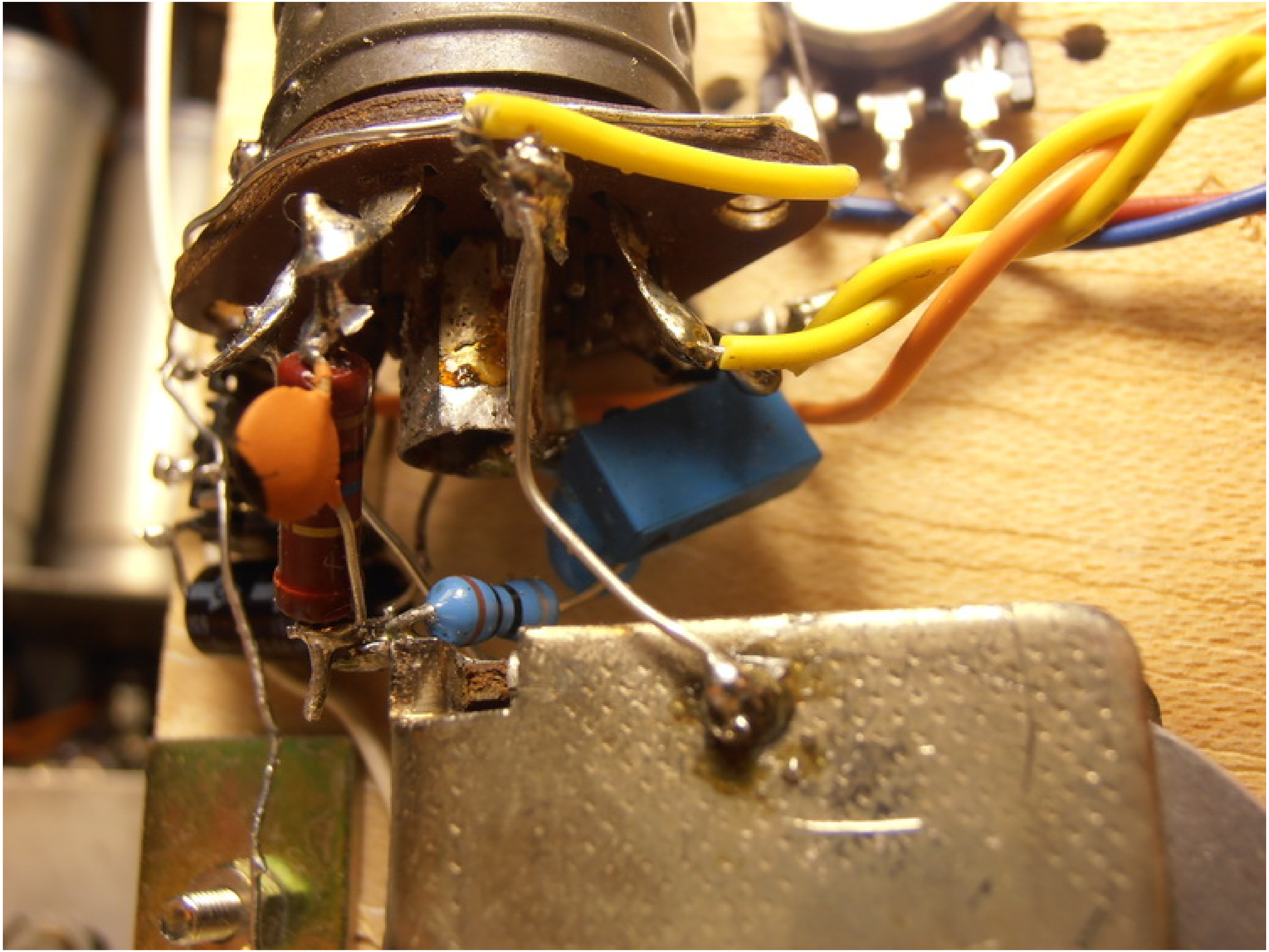

EI 38-12G/7008/112
230 V 50-60 Hz (1-5)
Prim. - 32 mA T
9 V - 3,2 VA (7-9)
ta 70/B
COMELIT
Mod. : 82144
PRI. 230V ~ 50Hz
SEC. 22+22V ~ 0,2A
SEC. 180V ~ 5mA
ta 60°C
115°C
1100/23/06/0323
10KΩ
2.2K
C-173A
13V
135V

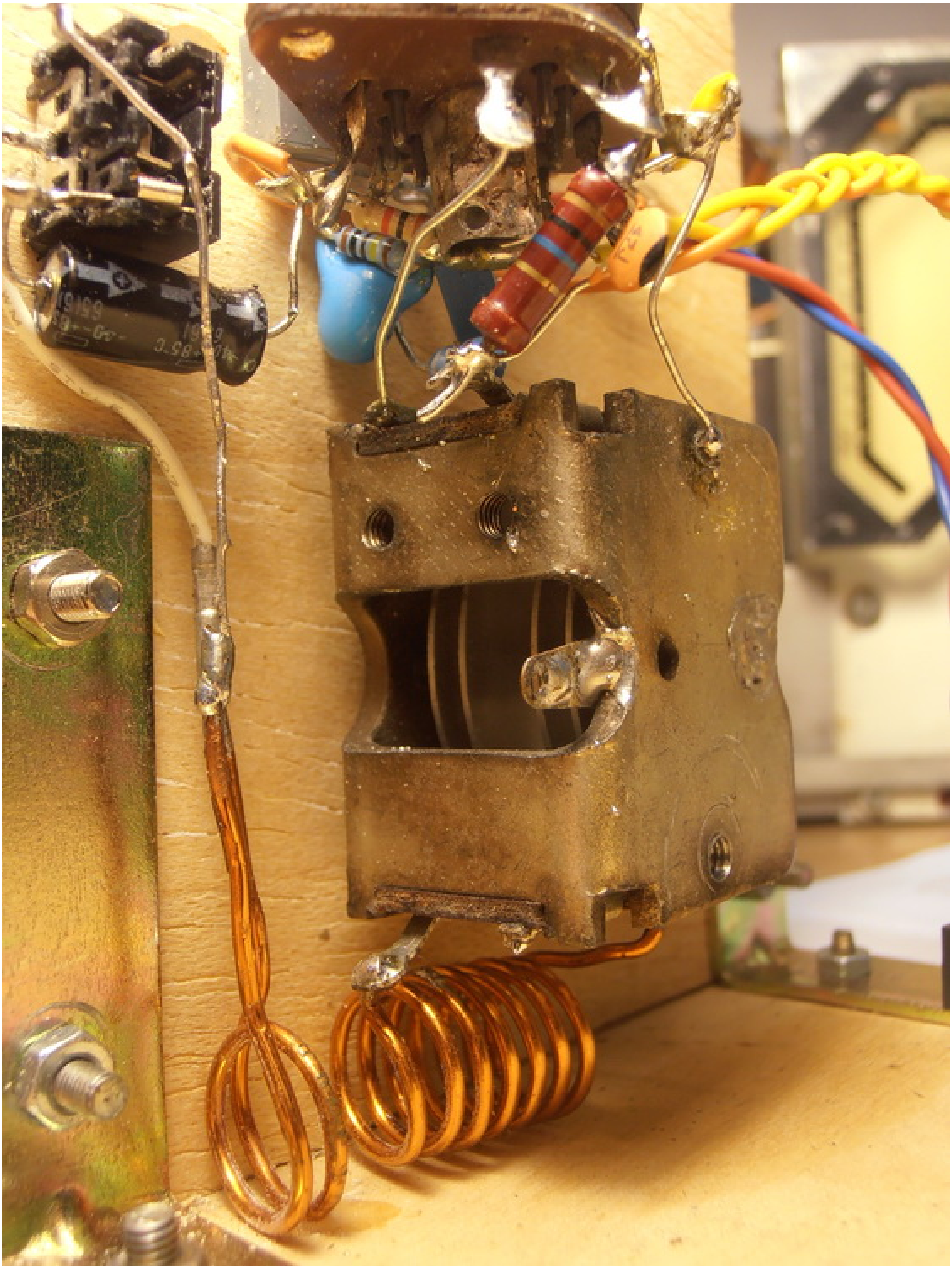


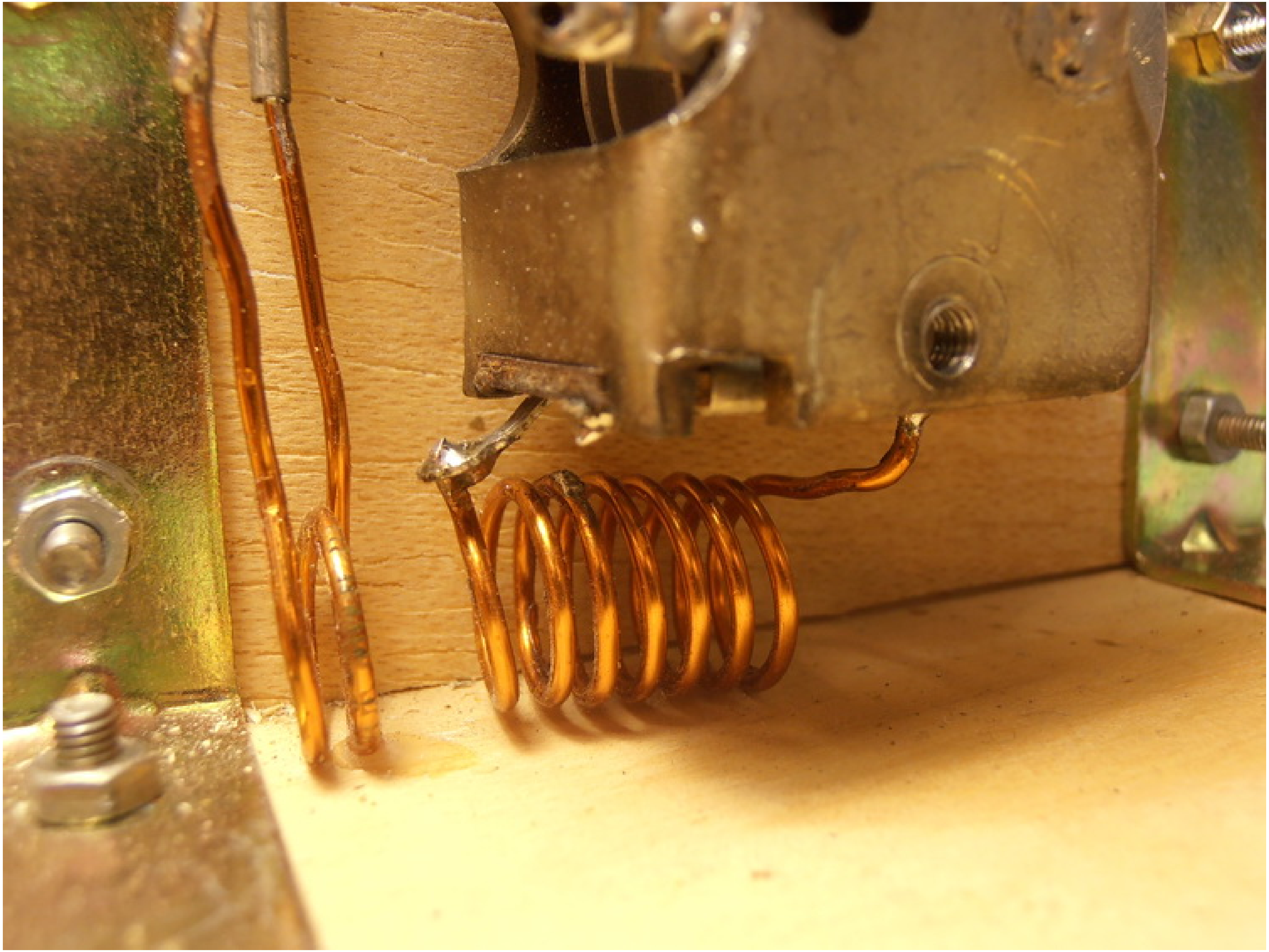

ON/OF
VOLUME


22 K A
400
1300



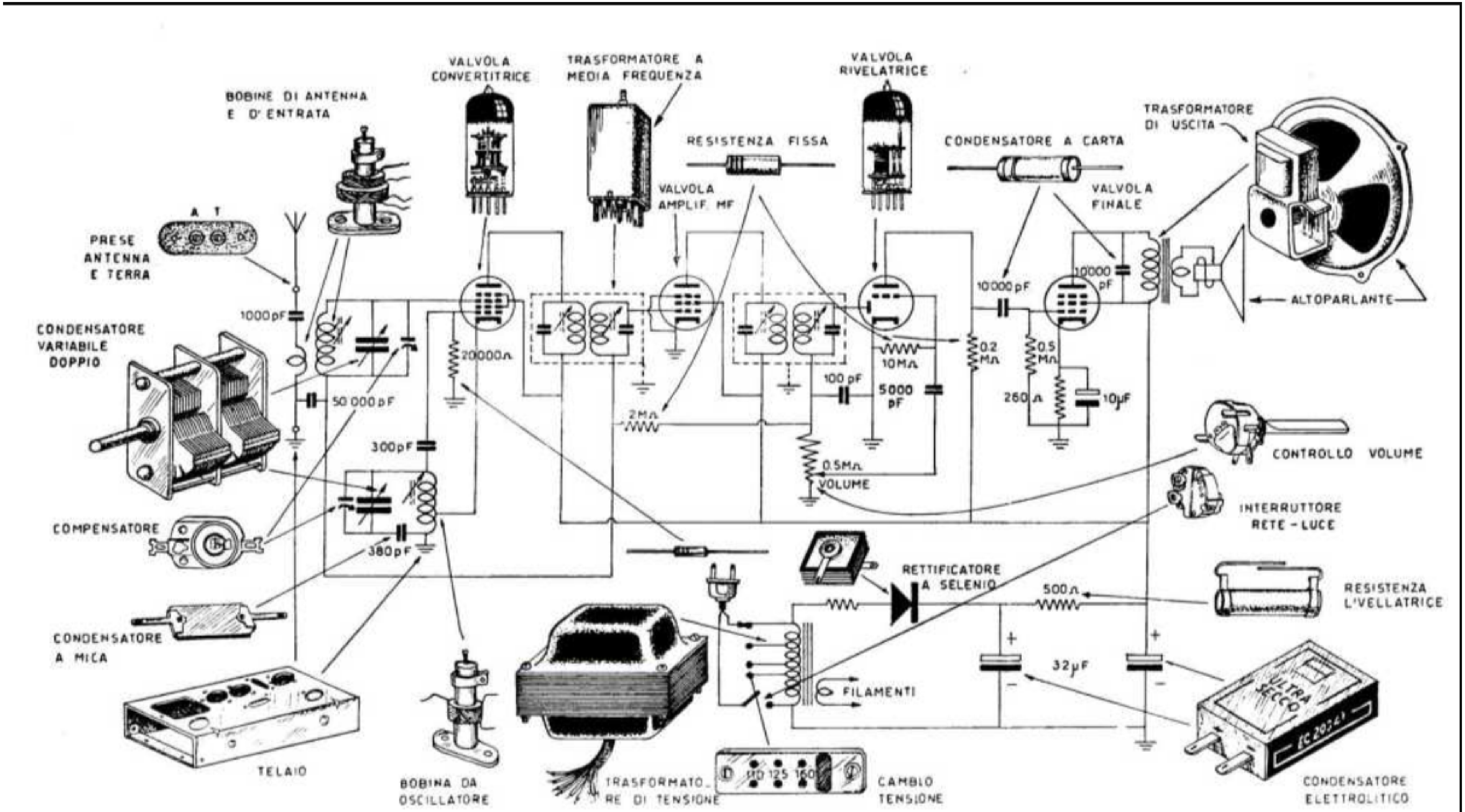


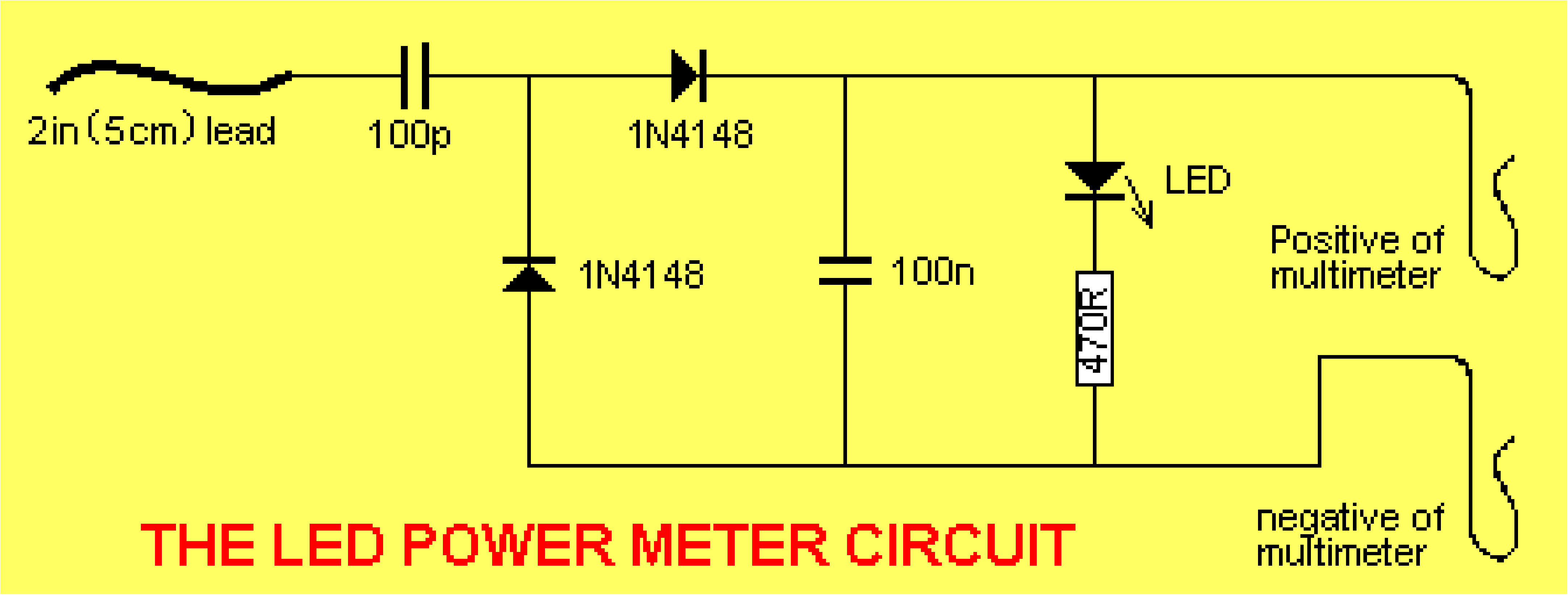




List of components

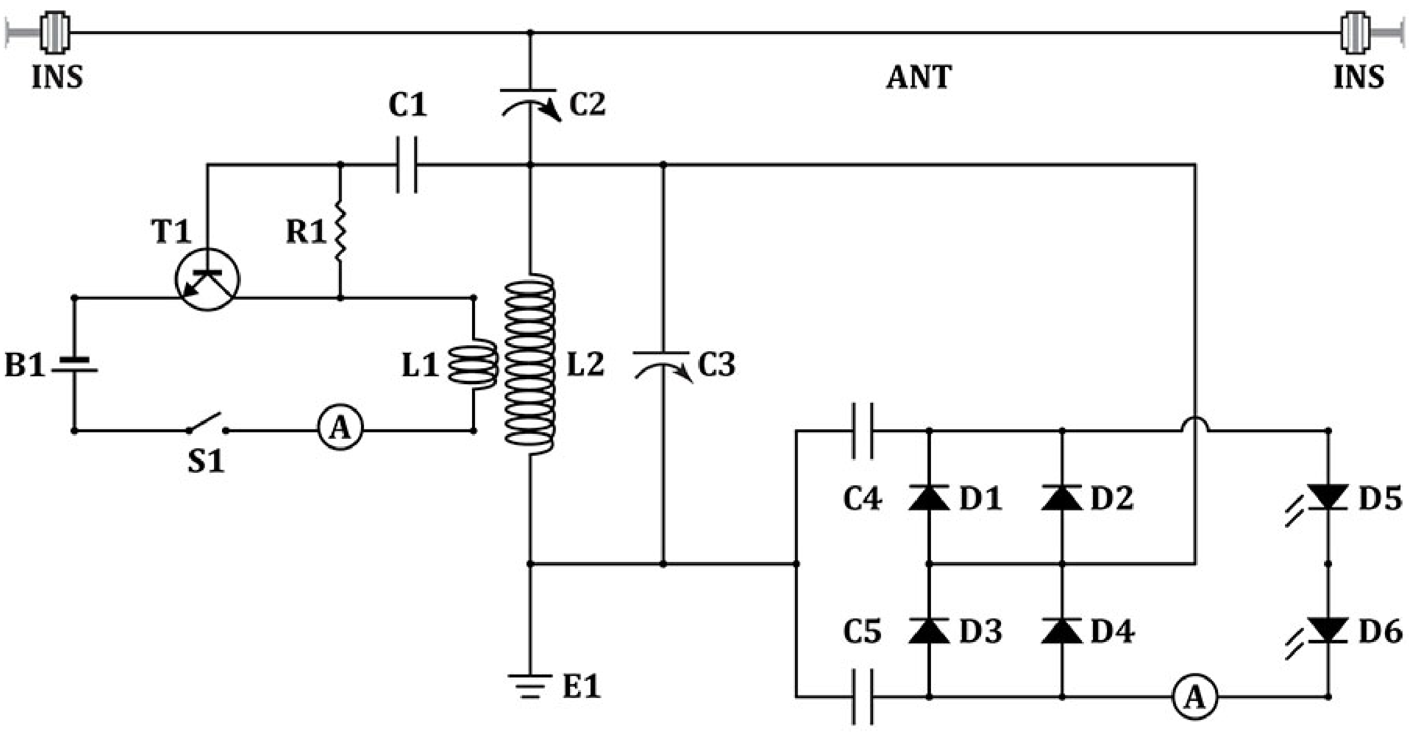
V1 = valve ECC81 or 12AT7
R1 = 10Mohm
R2 = 100Kohm
R3 = 47Khohm
R4 = potentiometer 22Kohm linear
R5 = 1Mohm
R6 = 1Kohm
C1 = variable capacitor in air 20 + 20pF
C2 = ceramic 47pF
C3 = 10nF minimum 100V
C4 = 2.2nF
C5 = 25uF 16V electrolytic
C6 = 10nF 250V or more
L1 = 7 spiers spaced 1.5mm, diameter 1.4mm thread on 1cm support
L2 = 2 spaced spaced 1.5mm, diameter 1.4mm thread on 1cm support
JAF1 = 5-10uH Noval
valve plinth with screen support or take the screen separately.
Stereo jack to be connected with the two earphones in series (do not connect the central mass terminal).
2 knobs for tuning and reaction.
mammoths for connections.
Directional stylus antenna.
For resistances to the maximum use from half a watt but also 1 / 4W should not give problems.


VALVOLA CONVERTITRICE
TRASFORMATORE A MEDIA FREQUENZA
VALVOLA RIVELATRICE
BOBINE DI ANTENNA E D' ENTRATA
RESISTENZA FISSA
CONDENSATORE A CARTA
TRASFORMATORE DI USCITA
A T
PRESE ANTENNA E TERRA
VALVOLA AMPLIF. MF
VALVOLA FINALE
ALTOPARLANTE
CONDENSATORE VARIABILE DOPPIO
1000 pF
10000 pF
10000 pF
0.2 MΩ
0.5 MΩ
20000 Ω
10 MΩ
50000 pF
100 pF
5000 pF
260 Ω
10 µF
2 MΩ
300 pF
0.5 MΩ
VOLUME
CONTROLLO VOLUME
COMPENSATORE
INTERRUTTORE RETE - LUCE
380 pF
RETTIFICATORE A SELENIO
500 Ω
RESISTENZA L'IVELLATRICE
CONDENSATORE A MICA
32 µF
FILAMENTI
ULTRA SECCO
TELAIO
BOBINA DA OSCILLATORE
TRASFORMATORE DI TENSIONE
110 125 160
CAMBIO TENSIONE
CONDENSATORE ELETTROLITICO


2in (5cm) lead
100p
1N4148
1N4148
100n
LED
470R
Positive of multimeter
negative of multimeter
THE LED POWER METER CIRCUIT

VALIDATION 2

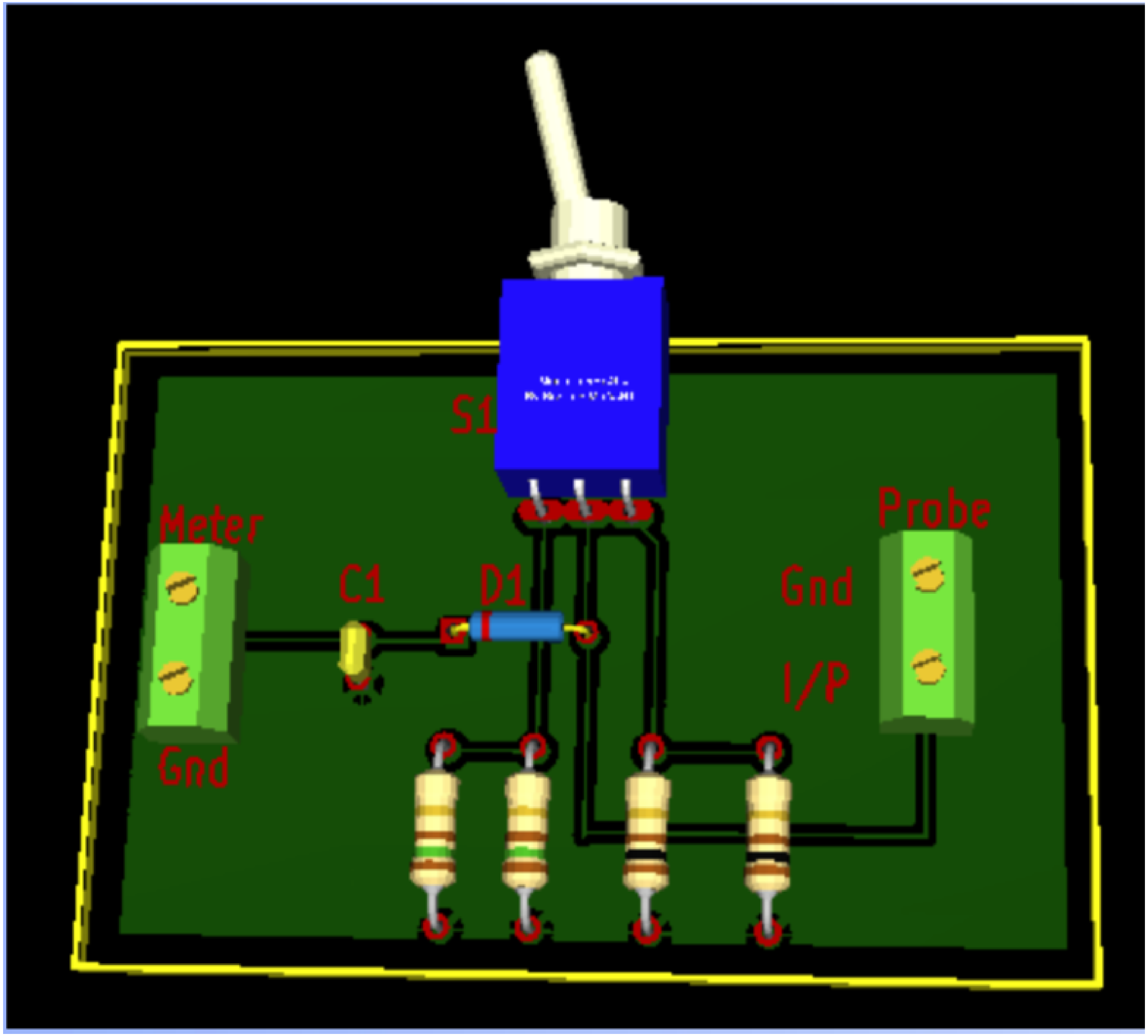
Radiant Energy Proof of Concept Receiver Schematic — v2.6

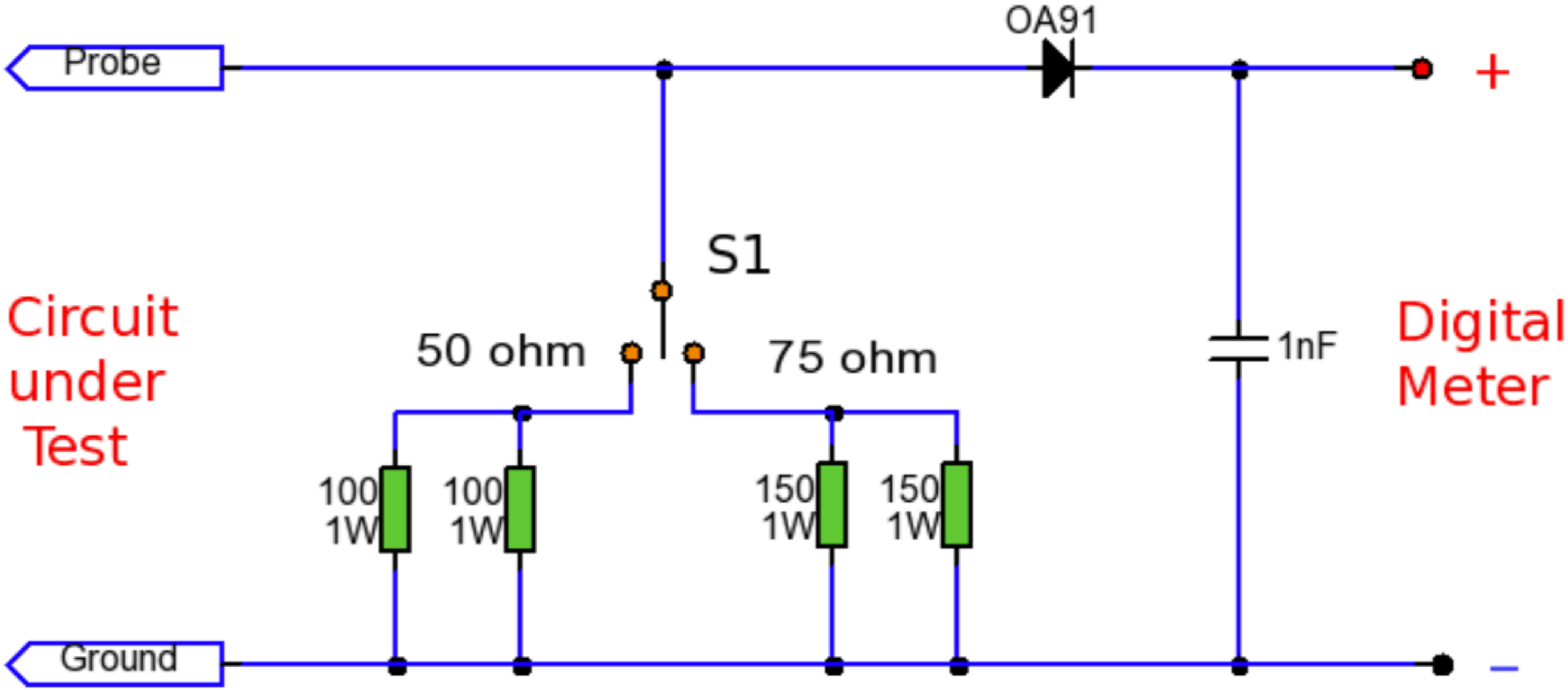


Key

A: Analogue mA ammeter.
ANT: Antenna 65’ long, 6ga, V shape, electrically isolated at least 10’ from the ground.
B1: 6 volt SLA rechargeable battery.
C1: 560pf, 50v ceramic capacitor.
C2, C3: 365pf variable air capacitors, less than 1kv.
C4, C5: 450 volt, 47µF electrolytic capacitors.
D1-D4: UF4007 1.0a ultra fast recovery diodes.
D5, D6: 2 - 3.7 volt, 30ma, 10mm ultrabright LEDs.
E1: Earth grounding rod.
INS: Electrically non conductive insulators.
L1: 3 turns, 18ga wire wound over L2 windings.
L2: 50 turns, 20ga enameled wire wound on a 3” diameter cardboard tube.
R1: 10k, 1/4 watt resistor.
S1: On/Off switch.
T1: MJE13007 transitor.

Input: 6 volts @ 7.5 mA.
Output: 6 volts @ 38 mA.
Gain: 30.5mA = over five times more output than input.


S1
Meter
C1
D1
Probe
Gnd
I/P
Gnd



Probe
OA91
+
S1
Circuit under Test
50 ohm
75 ohm
1nF
Digital Meter
100 1W
100 1W
150 1W
150 1W
Ground
–

N. TESLA.

APPARATUS FOR TRANSMITTING ELECTRICAL ENERGY.

APPLICATION FILED JAN. 18, 1902. RENEWED MAY 4, 1907.

1,119,732. Patented Dec. 1, 1914.